Material OCTOBER Handling Engineerin

Established in 1945 as FLOW Magazine

BETTER STATUSa new plan

page 57

PROGRAM YOUR TRUCK MAINTENANCE

MOVE BULK MATERIALS MECHANICALLY page 72

9 ATTITUDES FOR BETTER HANDLING page 79



HFMHE

FMHE





INDUSTRIAL PUBLISHING

The original publication of the material handling industry, preferred by identified buyers of material handling, packaging and shipping equipment and supplies.

with **Faultless** Casters You Can Utilize Production

and Change Plant Layout as Needed!



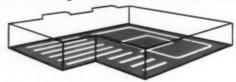
GENERAL SERIES 100 CASTER



Today, your production line can move in a serpentine pattern



...tomorrow it can be changed to a straight-line or circular flow



A fluid Faultless Castered production line is quickly reshaped as needed . . . to suit new products, design changes, retooling, time-and-motion study recommendations, etc. Also Faultless Castered trucks, dollies, racks, carts can transport your manufactured products outdoors for yard stocking. Whatever your production line load requirements, floor surfaces, space limitations, Faultless engineers the precision casters to meet your specific requirements and limitations.

ASK YOUR DISTRIBUTOR: Your nearby Faultless Industrial Distributor maintains a substantial inventory of Faultless Casters for immediate delivery. He and one of the strate-gically located Faultless Sales Engineers are available to work with you on every handling problem in your plant. Or write for complete information.



LIGHT DUTY SERIES 400 CASTER

MEDIUM DUTY SERIES L900 CASTER



HEAVY DUTY RIES H900 CASTER

HEAVY DUTY SERIES 1300 CASTE







Faultless Caster Corporation Evansville 7, Indiana

Branch Offices in principal cities; see the Yellow Pages of the telephone book under "Casters". Canada: Stratford, Ontario

Circle 65 on Reader Service Card



NEW NEOTHANE

can give you up to 4 times "normal" service

From this unusual angle-looking up through a sheet of heavy plate glass-you can easily spot some of the reasons why ordinary Pressed-on Solid Industrial Tires fail prematurely.

But even this kind of punishment is no great threat to NEOTHANE, Goodyear's rugged new polyurethane tire compound.

You see, NEOTHANE is self-armored against stray nails and screws—metal chips and shavings, even broken glass.

With NEOTHANE you can ford puddles of oil, grease, solvents—even acids. NEOTHANE never swells or gets spongy.

Here, then, you have lift-truck tires that won't let you down when the going gets rough—even when moving 2 to 4 times the loads ordinary tires can

handle. In fact, they'll give you up to 4 times "normal" service in tirekilling jobs. Write Goodyear, Industrial Tire Sales, Akron 16, Ohio.



NEOTHANE INDUSTRIAL TIRES BY

GOOD FYEAR. Neothans—T. M. The Goodyear Tire & Rubber Company, Akron, Ohl

MORE TONS ARE HAULED ON GOODYEAR TRUCK TIRES THAN ON ANY OTHER KIND

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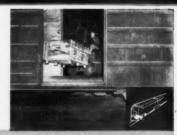
Aircraft: Manufacturers of aircraft com ponents depend upon Palletainers for ore efficient, economical parts ware housing, inventory and safer transit.



pulverized materials are rapidly turning to Palletainers as a safe, sure method for bulk-load handling.



Agricultural: Conneries and foodstuff processors are using Palletainers for storage, processing and shipment of their products. Palletainers are ideal for cold storage or fast-freezing.



Railroads: Car loading and unloadings are faster, shipments safe and secure with no damage to contents and car loading space is properly used.



Automotive: Auto, truck and tractor facturers have long been aware of Palletainers advantages for their varied processing, storage, warehousing and shipping operations



Electronics: Manufacturers simplify their housekeeping with Palletainers. Indoors or out, Palletainers efficiently and eco nomically replace barrel, box and bin



Food Processing: Palletainers are well known to the food freezing and processing industries because of their aeration d easy sanitation features.



Utilities: Gas and electric companies find that Palletainers simplify warehousing, storage and inventory. Contents are protected, clean, visible - ready for use



Appliance: Manufacturers of appliances partation of delicate or fragile products prior to packaging operations.



Foundry: In foundries and forge plants, Palletainers have no equal. Handle capa-city loadings, speed trucking and delivery. Can be quickly and safely stacked to



Exporting: Palletainers provide the protection for any cargo. Delicate fruits or rugged castings—all are easily, economically loaded, transported or stored.



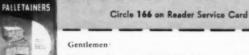
Textile: Textile and milling concerns simplify handling problems with Palletainers while providing protection for those un-usual, hard to handle items.

applications unlimited

No matter what you manufacture, store or transport . . . you need Palletainers! For Palletainers carry loads up to 6000 pounds with perfect safety. Form-welded steel legs provide 8-way entry for fork lift trucks and secure ceiling-high stacking. Full visibility permits speedy inventory in or out of storage and sturdy steel rod, welded mesh protects cargo perfectly.

USP Palletainers are available in a wide range of sizes, types and capacities to match each specific plant need. Why not survey your plant today and start

your "savings program" the Palletainer way?



Please send me complete information on USP Palletainer applications

Please have one of your materials handling engineers contact me at once



Bulk Lode 4.000-6,000 lb.



capacities





Searing Plate 2,000-4,000-6,000 lb. conncities



Warehouse 3,000-4,000 lb. capacities

All Palletainers fold down to save approximately 75% of return space shipping or storage space.

UNION STEEL PRODUCTS CO.

500 N. BERRIEN ST., ALBION, MICHIGAN

Banner Metals, Inc., Compton, Calif.

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Address ___

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Zone State_

Title

Special Offer ... Try those tested, proved-in-service containers on a 60-day memo billing basis. (Your obligation is freight, only.) Material Handling Engineering

volume 15 number 13

reader's guide to

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Tiering racks handle everything that comes over the receiving dock.

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Easy-to-reach rug storage has bonus benefits.

COVER: The status climb for a man in material handling is a difficult proposition because of the lack of agreement on his responsibilities and his place in the organization. He needs more symbols of achievement along the way. In this issue Harry Freeman of the MHEDA Training Center proposes a plan by which material handling men can gain the recognition they deserve.





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shows you "HOW"...

the widest choice of floor trucks in the world can cut your costs!

For regular or "special" design floor trucks it pays to talk to Nutting first. Here's why: no other company makes more models, sizes or combinations of equipment than Nutting. Many times items which you may find listed as "specials" with other makes are regular equipment in Nutting's complete line. As a result you get "custom built" trucks at production line prices. You not only get overall lower prices; you also get the benefit of 68 years of experience, design "know-how" and modern manufacturing skills. To save valuable hours of your time and get the right equipment for your plant, talk to a Nutting representative first, for all your floor truck needs!

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All types of dollies for boxes & cases



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Shelf trucks for sub-assemblies



Bollies for cylindrical & odd shaped items



Triform & box trucks for packages & bundles



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Tilt style platforms -Wood & steel frame

Dollar for dollar, feature for feature Nutting is your best floor truck buy. Write for your free copy of new Junior Catalog 59G.



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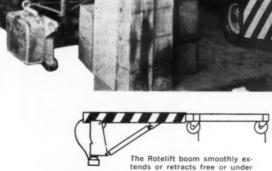
DROTT GO-DEVIL'S

GOT REACH 103" of it

Mobility and versatility are combined in the Go-Devil to make hundreds of material handling jobs easier, faster and safer. The uniquely designed and fully maneuverable Rotelift boom makes it as flexible as a giant arm. It lifts, hauls, rotates, extends, and retracts all under smooth, fingertip controlled, hydraulic power.

If you can't afford "second chances" in your materials handling write for your free file size bulletin MH-200 today. It's yours for the asking.

Materials Handling Division Milwaukee, Wisconsin



Boom extension is hydraulically con-trolled by this lever.



Go-Devil's got swing...

360° of it!

Go-Devil's got lift...

15' of it!

Go-Devil's got haul...

4000 lbs. of it!



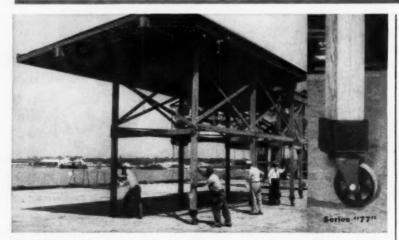
Circle 53 on Reader Service Card





MATERIALS-HANDLING NEWS

NEW AND UNUSUAL APPLICATIONS OF BASSICK CASTERS THAT MIGHT BE ADAPTED TO YOUR HANDLING PROBLE



Rolling roof aids all-weather shipments

As one of their steps to build up shipping and enlarge port operations, Gulfport Port Commission, Gulfport, Miss., devised these novel movable sheds. They allow dry unloading of banana boats even in the heaviest of rainstorms.

The sheds roll quickly and easily into position on Bassick medium-duty "77"

Mile of towline moves

here on "Bassicks"

Here's just a small part of the materials-

handling set-up at the ultra-modern North Brunswick, N. J., plant of Johnson & John-

son. The famous makers of BAND-AID Adhesive Bandages, and a variety of other

first-aid and medical products solve

materials-handling problems with carefully

planned towlines, totaling more than a mile

in length. On each towline truck, easy-roll-

ing, easy swiveling Bassick Series "S99"

casters, in front, and Bassick "Alcore"

wheels, at rear, insure maximum life with

minimum maintenance.

and heavy-duty "HA" series casters with 8-inch forged-steel wheels. And they roll away just as easily when no longer needed.

Whether your caster application is as novel as this or not, chances are there's a Bassick caster that's just right for the job. Why not check your Bassick distributor?



Easy rolling press roll

Gentle handling is what this rotogravure cylinder gets - on its way to the printing presses of one of the country's largest highspeed printers.

Bassick Floating Hub casters (inset), on



the special dolly used for handling the cylinder, absorb shocks, protect floors, and make for easy movement over obstacles.

Illustration courtesy of "The Chronicle" the Early American Industries Association



Early baby walker on casters

Even babies used casters in early America, as this antique baby stroller shows. It has four casters (not Bassicks) and tip-proof design. Casters have grown a lot since those infant days. Today, there's a caster to move practically anything.



Massive test stand ... mobile electronics

The rigidity of a concrete emplacement is necessary for this fantastically precise gyro test-stand at Ford Instrument Co., Division of Sperry Rand Corporation, Series "68"



makers of guidance systems for some of our most famous missiles. But note the ready mobility of the electronic rack at right. Bassick casters allow smooth, easy motion to any location desired.

See your distributor who handles Bassick casters. He can help you select the right caster from hundreds of types, and has many of them in stock. 0.34



BASSICK COMPANY BRIDGEPORT 5, CO DELLEVILLE, ONT.





Circle 32 on Reader Service Card



...shrinks dunnage costs as much as 50%

It takes only seconds to inflate a Super-Cushion Dunnage Bag. But these portable, reusable, rubberized fabric bags are potent weapons in your fight against rising shipping charges.

They eliminate the need for wooden shoring that's used but once. They make it unnecessary to keep a crew of carpenters on the loading dock. And these bags are so easy to handle—so quick to install—they cut both loading and unloading time, shrink demurrage.

But remember, all this takes <u>genuine</u> Super-Cushion bags developed by the G.T.M. — Goodyear Technical Man — and his colleagues. Where other bags must be laid out and pre-inflated to make sure misaligned bladders won't burst, these exclusive unit-construction bags slip right into place before inflation. They even fit spaces as narrow as 2 inches.

Super-Cushion Dunnage Bags have other pluses, too: They're lighter—easier to handle. They have a rough-impression, nonslip surface to prevent them from working out of place. They are amazingly rugged.



Wouldn't it pay you, then, to check into these great new dunnage bags—already cutting shippers' dunnage costs as much as 50% and ending breakage to boot! Just contact the G.T. M.—or write Goodyear, Industrial Products Division, Akron 16, Ohio. Super-Cushion—T.M. The Goodyear Tire & Rubber Company, Akron, Ohio

Lots of good things come from

GOODFYEAR

THE GREATEST NAME IN RUBBER
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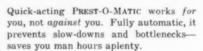


ENDS TRAFFIC) BOTTLENECKS

The PREST-O-MATIC* Door takes the



out of "Stop and Go" traffic



Your fork truck driver simply pulls an overhead cord and goes through the opened door without stopping. The door opens and closes Prest-O-Matically in as little as 2 seconds. Compare this with manual doors that require your driver to stop, dismount, open the door, return to the truck, drive through . . then stop to close the door again! Multiply



this waste motion by the number of trips per day . . . per year.

Engineered to snug-fit your doorways, PREST-O-MATIC remains tightly closed when not in use. Neoprene Sealing stops drafts, eliminates heat or air-conditioning loss.

Complete in one easy to install unit. No extras. Available in Bifold (shown here) and Sliding. You choose the motive power—air or electric. Before you buy any door, get all the facts on PREST-O-MATIC. See our insert in Sweet's Catalog or, better still, write us today.

CLARK DOOR COMPANY,

COMPANY, INC. 514 Hunterdon St., Newark 8, N. J. since 1878

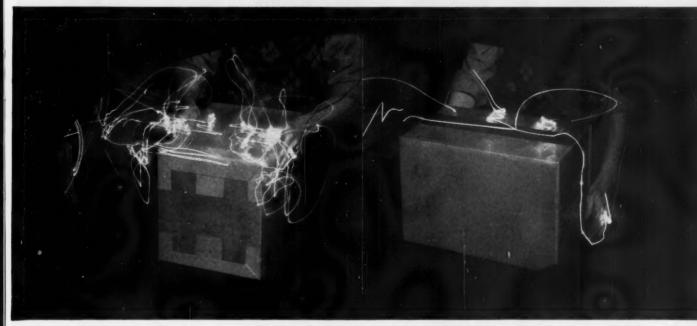


Prest-O-Matic®
Single Sliding Door
of hollow metal
construction.

Air Operated Prest-O-Matic® Double Sliding Door.



The Ludlow Method 2-STRIP CASE SEALING FASTER - STRONGER - COSTS LESS



OLD WAY (38.5 Seconds) White lines show actual motions required for sealing just the top of a container with plain paper tape.

LUDLOW METHOD (11 Seconds) The same job is done in a single motion. And tough multi-directional fibre reinforcements make closures nearly 3 times as strong.

The tapes that broke the six-strip habit!

Ludlow's reinforced tapes, SNAKETAPE and GLASPUN, are so strong that only two strips are required to seal your cartons instead of the six strips required when plain paper tapes are used. This faster, stronger center seam closure method actually reduces your tape application costs by 66%. Both SNAKETAPE and GLASPUN are approved for shipment on all carriers, including railroads under U.F.C. Rule 41.

Be sure to specify Ludlow reinforced tapes — either glass-reinforced GLASPUN, or world-famous SNAKETAPE, the only reinforced tape with rayon reinforcement. The Ludlow name is your best assurance of uniform quality and dependability.



A-SNAKETAPE®

Rayon-Reinforced

B-GLASPUN°

Glass-Reinforced

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Please send me more information on the Ludlow 2-Strip Sealing Method. I am now using

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Wire Stitching

Plain Paper Tape

Zone State

VPI-Coated Papers • Greaseproof Papers • Waterproof Papers • Poly-Coated Papers • Gummed Tapes • Federal Spec. Papers • Label & Specialty Papers • Plastics

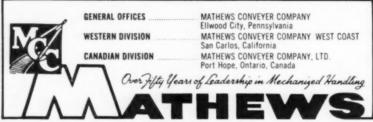
City

This kind of outstanding performance can be yours . . .

• You, too, can have the benefit of planned mechanized handling. Confusion and re-handling are virtually eliminated, and in their place is created a smooth, continuous flow of product through processing, warehousing and shipping.

For up-to-the-minute materials handling, we believe you get the best there is when you buy equipment that is Mathews Engineered—Mathews Planned—Mathews Built for you.





Circle 114 on Reader Service Card

CALENDAR OF EVENTS

October 11

Hoist Manufacturers Association Meeting The Pittsburgh Hilton Hotel Pittsburgh

October 11-12

21st Annual meeting Fibre Box Association Waldorf Astoria New York

October 14-23

First International Packaging Machinery Show Paris

October 31-November 4

AMA packaging management course Hotel Astor New York

October 31-November 2

Packaging Institute, National Packaging Forum Statler Hilton New York

November 1-3

Material Handling Institute Central States Show Kentucky Fair and Exposition Center Louisville, Kentucky

November 1-3

9th Annual Canadian National Packaging Exposition Automotive Building Toronto

November 14-15

4th Annual Wooden Pallet Manufacturing & Promotion Clinic US Forest Products Laboratory Madison, Wisconsin

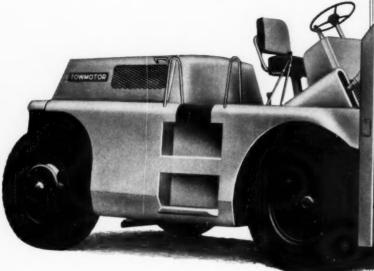
February 22-24

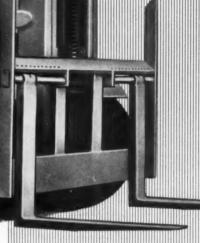
MHI Pacific Coast Show Cow Palace San Francisco

Announcing the

BIG NEWS







If you unload, move, stack and load heavy materials be sure to get information on the new big-capacity Towmotor "Monarch" Series Fork Lift Trucks. They're as new . . . all-new . . . as they look!

All eight of the new "Monarch" Series models are built to handle your roughest and toughest jobs . . . yet they are easy to handle . . . and feature—

- New High-Traction "Low Profile" Styling
- New Extra-Visibility Mast Design
- · New Equalized Weight Distribution
- · New "Unitized" Frame and Body Construction
- New Up-Dated Easy-Operation Features

They all include many more engineering "firsts" described in new Towmotor "Monarch" Series bulletins covering models with 5 to 12 ton load capacities. For specifications, write Gerlinger Carrier Co., Dallas, Oregon.

TOWMOTOR

"MONARCH"

AN ALL-NEW SERIES OF HEAVY DUTY FORK LIFT TRUCKS BY



FORK LIFT TRUCKS, CARRIERS AND TRACTORS SINCE 1919

Gerlinger Carrier Co., Dallas, Oregon, is a subsidiary of Townstor Corporation

Circle 163 on Reader Service Card



ESB Buys Edison Division

NICKEL ALKALINE BATTERY DIV.,
Thomas A. Edison Industries unit of McGrawEdison, was purchased by The Electric
Storage Battery Co. This is part of an ESB
move to diversify. Nickel Alkaline Battery
Division will continue to be headed by Robert
A. Weeks Jr., division manager, and James A.
Mustard Jr., general sales manager. The division has plants at West Orange and the Silver
Lake section of Bloomfield and Belleville, N.J.

J. P. Greco Heads Bigelow-Garvey

NEW PRESIDENT of the Bigelow-Garvey Lumber Co. is Jerold P. Greco, former executive vice president. He has been with the firm for 24 years.

Trucks Load Ship in 4 Hours



Containerized shipping received a boost in the arm when the Floridian recently started Atlantic Coastal service between Newark and Jacksonville. Six lift trucks load 2,000 tons in four hours, providing faster service at less expense than previously possible. The Floridian holds 142 containers 8' x 8' x 17', loaded by four 42,000-lb-capacity Gerlinger trucks. It further holds 28 containers 8' x 8' x 8½', loaded by two 18,000-lb-capacity Tow-

motor trucks. The Floridian loads from the stern, a ramp connecting dock and hold. Containers lock together for stability at sea.

All-State Takes Over Hoist Unit

ALL-STATE ENGINEERING Co. has bought the Industrial Crane and Hoist operation of Borg-Warner Corp. The operation is being moved from Chicago to Milwaukee where All-State has added to its plant size. All-State President Albert A. Saunders said the new acquisition will enlarge sales volume four times. All-State makes stacker cranes, overhead traveling cranes, jib cranes, gantry cranes, crane runways, and specially-designed equipment.

Clark Hydraulic Products Made in Belgium

CLARK EQUIPMENT INTERNATIONAL, C. A., has authorized its Belgian licensee to make the Clark line of hydraulic products. La Brugeoise et Nivelles, S. A., will sell the products to Clark licensees in Europe and to the general European market. The Belgian firm makes and distributes Clark fork trucks and construction equipment.

World's 1st Underwater Storage City

Anchored 300 feet off St. Petersburg Beach in 35 feet of Gulf of Mexico waters, the world's first underwater storage city is now in operation.

The new storage facility will be used by St. Petersburg Beach to cache emergency supplies of water, fuel, medicines, and food in the event of enemy attack or a natural catastrophe.

The project was pioneered by Jet Fuel & Storage Co., Firestone Tire & Rubber Co., and the Global Marine Engineering Co. Two 10,000 gallon tanks, forerunners of million gallon con-

Continued on page 14





FOOT CONTROLS FREE HANDS

All Model H controls are foot-operated. except Forward and Reverse lever on steering post. Operator's hands are free to maneuver truck safely, quickly — a big advantage when inching and spotting



WIDE-OPEN SERVICE ACCESSIBILITY

Simply lift cover and open panel doors. All operating parts are exposed and in easy-to-reach spots for quick servicing.

Absolutely no under-truck adjustments.

No grease points, either, with L-S

"Lubricated-for-Life design! trailers, freightcars, or elevators. Low head room allows operator to clear 6' high doors.

NEW! MODERN ELECTRICAL DESIGN

Featuring smooth dynamic braking—easy, fast

Lewis-Shepard for rugged fork lift service. Its tapered I-Beam construction provides superior resistance to torsion and side thrust. Unitized construction of mast carriage gives smooth mast operation.

... AND many other important features. Send coupon for New Model H Circular 37.



The "MASTER" Line

LEWIS-SHEPA

The COMPLETE line of materials handling equipment



LEWIS-SHEPARD PRODUCTS, INC. 1310 Walnut Street

Watertown 72, Mass.

Please send me:

L-S Circular #37 on New Model H

L-S MASTER Line Catalog

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TITLE	
COMPANY	
CITY	STATE

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up to 300 tons, with Multiton Roller Skids and suitable tractive power. They lay own track and swivel easily in close quarters. Junior Kit available for loads to 6000 lbs. For full information or free demonstration of Multiton equipment, write:

18 SECATOAG AVE., DEPT. E . PORT WASHINGTON, NEW YORK In Canada: Griswold Engineering Ltd., Montreal and Toronto Circle 156 on Reader Service Card

NEWS

ROUNDUP

tainers, rest on specially designed concrete cradles. The system is radiation proof, and the tanks are virtually blast proof. Only a direct hit will shatter the rubberized fabric coatings.

Lease Your Shelving, Shop Equipment

A NEW LEASING PLAN has been started by Columbia-Hallowell Division, Standard Pressed Steel Co. It offers shelving, shop equipment, and office equipment without a large original expenditure. Leasing is for 3 to 10 years, after which you may renew the agreement at 20 percent of original rates or buy the equipment at 20 percent of the leased property price

Lift Trucks Go to Conventions



MODERN HANDLING METHODS improved television coverage of political conventions. A Clark lift truck holds the camera during a demonstration for Sen. Barry Goldwater in Chicago. NBC and CBS used electric fork trucks

to carry the cameras safely and quickly through the crowds. The special platforms provided clear shots.

Packaging Management Course

A ONE-WEEK COURSE in packaging management will start Oct. 31 in New York City's Hotel Astor. Sponsored by the American Management Association, the course is for managers who already hold packaging responsibilities and others who want to know more about the total packaging function. The course will include lectures, case studies, small group discussions, and problem solving projects from actual experiences.

Magnesium Tote Bins on Market

Magnesium Tote Bins, about 40% lighter than the standard aluminum Tote Bin. are now offered by Tote System. Inc. They are the same price as aluminum containers.

The price equalization policy, Tote officials say, will allow more companies to turn to bulk

Continued on page 16





-2100-CARGOTAINERS®

increase production for Gehl Brothers

Visit us

at the MATERIALS HANDLING INSTITUTE

> CENTRAL STATES SHOW

LOUISVILLE, KENTUCKY NOVEMBER 1-3, 1960 Gehl Brothers Manufacturing Company, farm equipment builder, has standardized on CARGOTAINERS for storing and transporting machinery parts. Results add up to a savings of \$120.00 annually for each of these wire mesh containers in use.

CARGOTAINERS save this company \$1,000 a month in handling costs alone. Cleaning and degreasing operations have been cut by ten hours. Parts formerly shipped loose in trucks took three men 2½ hours to unload and weigh.

This is now done in 15 minutes by two men, with CARGOTAINERS.

This is one of many case studies which prove CARGOTAINERS best for handling and storing parts and materials. Cleanliness, visual inventory and collapsible features make these wire mesh containers ideal for your application. Stacked three high, they save thousands of feet of floor space.

Write today for brochure on various models and sizes.



CARGOTAINER

-DIVISION-

TRI-STATE ENGINEERING COMPANY

WASHINGTON, PENNSYLVANIA Circle 165 on Reader Service Card



...let us help vou save on every hoisting operation



FLECTRIC HOISTS

Push Button Budgit Electric Hoist. For regular hoisting service. Portable. Hang up, plug in, and use. Two fully enclosed automatic brakes give fast, accurate spot-ting. 1/2-ton model lifts at 34 FPM. Hook suspension. 1/a to 2 tons

Load Lifter Wire Rope Electric Hoists. 1/2 to 15 tons. Safe 24-volts at the push-button. Single and 2-speed control. Two auto matic brakes, tug or hook suspension; also with push, hand-geared or motor-driven trolley. Hi-hook



AIR HOISTS

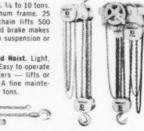
Rudgit Air Haist Link and roller chain types. Pendant cord control. Speeds infinitely variable to 75 FPM. Rigid mount push trolley available. Safety hooks standard. 1/4, 1/2 and 1 ton. Also Load Lifter Air Hoists with wire rope load line

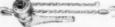


CHAIN BLOCKS

Budgit Chain Blocks, 1/4 to 10 tons. Light, tough aluminum frame. 25 lb. pull on hand chain lifts 500 lbs. Fast action load brake makes lowering easy. Hook suspension or Army type trolley.

Tugit Lever-Operated Hoist, Light, compact, portable. Easy to operate even in close quarters — lifts or pulls at any angle. A fine maintenance tool. 3/4 to 3 tons.





BUILD-IT-YOURSELF CRANE ASSEMBLIES



Budgit Crane Assemblies. Low-cost "build it yourself" kits to construct single girder cranes up to 6 tons and 30 ft. span without special tools. You buy 1-beam locally to save more. Packaged electric bridge drive adds efficiency. Kits also for 180° swinging bracket jib cranes up to 48.4 beaut 10 ft. seems 10 ft. see Kits also for 180° swinging bracket jib cranes up to 4½ tons, 10 ft. reach.

END YOUR LIFTING PROBLEMS

Phone your Shaw-Box Distributor for help in selection or write us direct for literature. 60L-10

Load Lifter Jib Cranes. Revolve 360° on ball bear-ings. No binding. Types that bolt to the floor serve 550 sq. ft. Others set in concrete serve up to 1500 sq. ft. 1/4 to 5



OVERHEAD HANDLING EQUIPMENT

Products of

MANNING, MAXWELL & MOORE, INC.

Shaw-Box Crane & Hoist Division . Muskegon, Michigan In Canada: Manning, Maxwell & Moore of Canada, Ltd., Galt, Ontario

Circle 112 on Reader Service Card

NEWS ROUNDUP

handling for over-the-road shipping. They reason that more payload can be delivered while still remaining within highway load limits. The price equalization policy applies to all sizes of the Tote Bins.

Elect Officers at Cleveland Crane

HERBERT T. FLORENCE is new president and general manager of The Cleveland



Safrood

Crane & Engineering Co. He started with the firm 37 years ago as an apprentice. He succeeds Chas. F. Safreed who is chairman of

the board. Other new officers: William J. Rvan. vice president and assistant general manager; Ralph Ford, assistant secretary and plant superintendent. New directors: Edward J. Jenkins, controller, and Richard A. Michelson.

Autopac Show in Paris

UNDER THE CODE NAME OF AUTO-PAC, the first International Packaging Machinery show will be held in Paris, France, Oct. 14-23.

The premiere show is scheduled concurrently with the 14th French Packaging Exposition, sponsored by the French Packaging Institute. The Institute will conduct a two-day technical congress during the show, with one day devoted to presentations on packaging machinery.

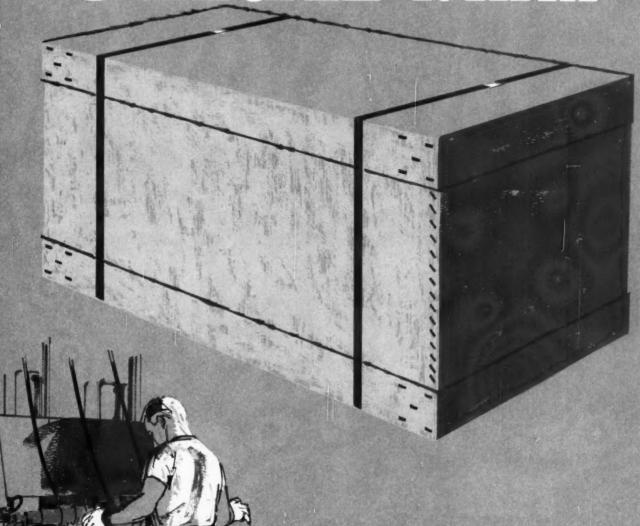
Industrial Rayon Cord Strap Debut

SPECIAL SHOWINGS FOR DISTRIBU-TORS throughout the United States have been launched by the Industrial Packaging Department of American Viscose Corp., Philadelphia. They are using the showings to help introduce Avistrap Cord Strapping, a new industrial rayon cord strapping.

Already presented in Newark, Greensboro, Atlanta, and Philadelphia, additional presentations are being arranged for Cleveland, Detroit, New Orleans, Dallas, Los Angeles, San Francisco, Denver, Milwaukee, and Minne-

Continued on page 22

STRAPitfirm

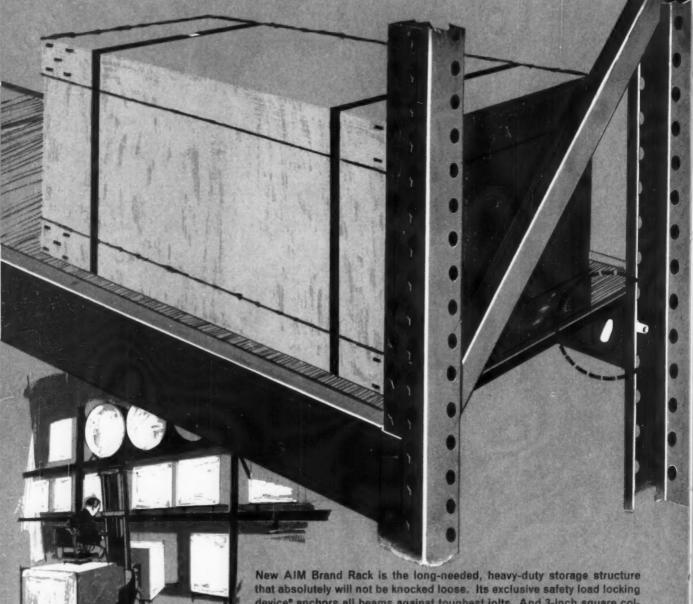


Shipments secured with strong Acme Steel Strapping have the best chance of arriving damage-free. Have your nearby Acme Idea Man show you actual case studies of how businesses like yours use these versatile steel straps most profitably. He will also demonstrate how Acme Steel's broad assortment of powered and manual strapping tools can help you whittle-down the cost of closing, unitizing, bundling, baling, bracing, reinforcing and tying packages and products of any size, any shape.

ACME STEEL STRAPPING

ACME STEEL COMPANY • 13515 Perry Avenue • Chicago 27, Illinois

STORE it safe



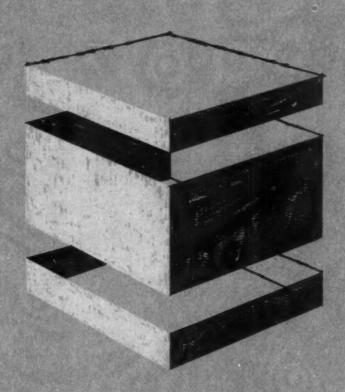
New AIM Brand Rack is the long-needed, heavy-duty storage structure that absolutely will not be knocked loose. Its exclusive safety load locking device* anchors all beams against toughest jolts. And 3-inch square columns, triple load bearing points per beam set a new high in strength and stability. Ask your local distributor how AIM Brand Rack builds profits through maximum space utilization . . . complete safety for personnel and storage. He also has full facts on industry's most versatile framing material—AIM Brand Slotted Angle.

CME F R

FRAMING



ACME STEEL COMPANY • 13515 Perry Avenue • Chicago 27, Illinois

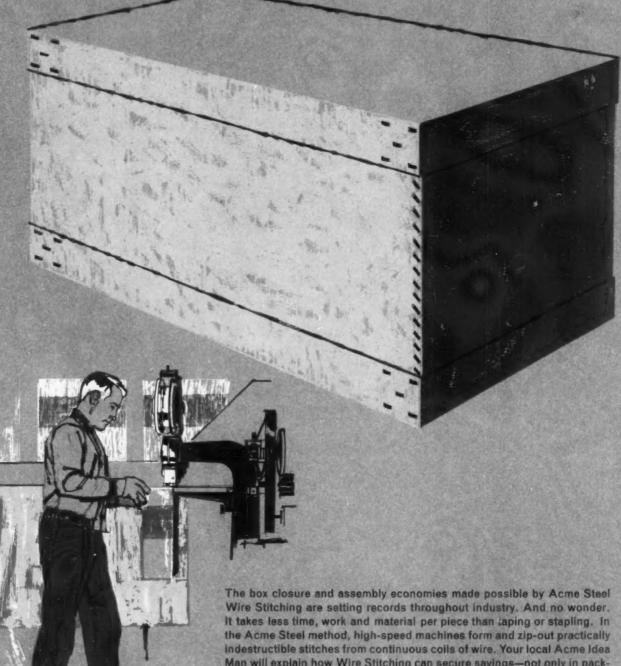


ACME STEEL

PACKAGE PLAN

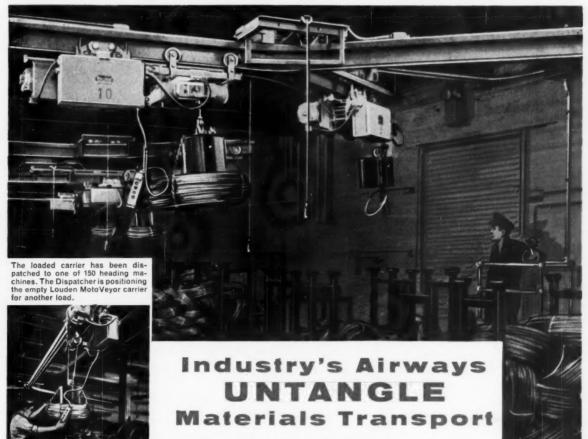
for cutting costs

TITCH it fast

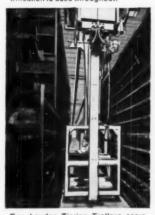


Man will explain how Wire Stitching can secure savings-not only in packaging, but in product assembly and literature binding.

ACME STEEL COMPANY • 13515 Perry Avenue • Chicago 27, Illinois



The carrier automatically stops at a selected heading machine, and operator lowers the coil of wire to heading machine reel. After hoist is raised, carrier automatically returns to Dispatch Area. Louden Shok-Pruf Electrification is used throughout.



Two Louden Tiering Trolleys serve each pan storage aisle. View shows Tiering Trolley Operator removing tote pan from storage for transfer to another department. The platform of the motor driven Tiering Trolley raises and lowers enabling the operator full coverage of the storage aisle. Current supplied by Shok-Pruf Electrification.

In planning their new plant at Clifton, New Jersey, the Parker-Kalon Division of General American Transportation Company, manufacturers of self-tapping screws and metal specialities, "took to the air" to end longstanding problems and needless costs in materials handling. Working with Louden engineers, they took advantage of the opportunities offered by monorail overhead handling to coordinate materials supply and manufacturing needs from receiving of raw stock to the shipping of the finished product.

Typical of the improvements made was the handling of stock in the Heading Room. In previous practice, 450 pound rolls of wire were carried by fork truck, one roll at a time, and stacked at one end of the department. When any machine needed wire, the machine operator had to roll a bundle from the supply to the machine, lift it manually and place it on the empty reel. Now Louden equipment ends all this waste of time and the ever present chance of physical injury. Louden handling delivers the stock wherever needed easily, swiftly and safely.

When you have a materials handling problem or plant problem involving lifting and transporting loads, call on Louden for suggestions. Louden's unparalleled experience and proven engineering leadership combined with Louden's broad line of equipment can save time and mistakes. Write or wire today.

THE LOUDEN MACHINERY COMPANY

1003 Broadway, Fairfield, Iowa A Subsidiary of Mechanical Handling Systems Inc. NEW...52 pages of illustrated applications ... industry by industry. Get the latest and most complete information on planning and equipment selection for the best in modern materials handling. Write today for your copy "COST-CUTTING WITH MONORAIL AND CRANES."



SINCE 1867...THE FIRST NAME IN MATERIALS HANDLING
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Sealed by Bureau of Weights & Measures Prior to Shipment

The Remarkable Dillon

MODEL P SCALE

OUTSTANDINGLY ACCURATE! COMPLETELY AUTOMATIC! FULLY GUARANTEED!

8 different capacities: 0-250, 0-500, 0-750, 0-1000, 0-2500, 0-5000, 0-7500 and 0-10,000 lbs. — ALL accurate to within 1/10 of 1% of full range! Sealed by Bureau of Weights & Measures prior to shipment. Large, 16" dial. Quick-set knob cancels out tare loads instantly. Ball bearing swivel hook, sealed mechanism, strong plastic crystal over dial. Shock-proof and full dampened against vibration. Truly America's finest, automatic sus-

pension scale yet priced LOW to suit the average shop budget.



COSTS YOU NOTHING TO INVESTIGATE. WRITE FOR PROFUSELY ILLUSTRATED BROCHURE AND FULL COLOR PICTURE.

Wes

W.c. Dillon & CO., INC.

14568Q Keswick St., Van Nuys 8, Calif.

Circle 51 on Reader Service Card

ROUNDUP

apolis. Avistrap is said to offer lighter weight, which reduces carton size and weight, and shipping costs.

Chrysler Markets Perkins Diesels

CHRYSLER CORP'S Marine and Industrial Engine Division has agreed to market Perkins diesel engines. Division President W. L. Pringle said these engines will augment the extensive gasoline engine line now produced by Chrysler. The diesels, made by F. Perkins Ltd. of England, come in 3, 4, and 6 cylinder units, from 25 to 130 hp. They're liquid cooled, operate up to 4000 rpm. Complete facilities for servicing, and a complete range of Perkins parts, will be available at all Chrysler engine centers.

Traveloader Shipped Overseas

OTIS ELEVATOR Co., Baker Industrial Trucks Division, has shipped to an English firm a 30,000-lb-capacity sideloading Traveloader. Dorman-Long Ltd. is using it at a gigantic steel rolling mill. This truck is specially insulated with steel and asbestos. The driver's cab is air conditioned. Panels of steel, reflecting aluminum, and Vermiculite enable the Traveloader to carry semi-steel heated to 900° C.

New Standard for Steel Conveyor Pulleys

You can select the proper pulleys with the help of a new standard: "Welded Steel Conveyor Pulleys—Recommended Load Ratings for Standard Pulleys." The booklet includes load rating tabulations, a list of pulley diameters, and a list of pulley face widths. It's the work of the Steel Pulley Engineering Subcommittee, Multiple V-Belt Drive & Mechanical Power Transmission Association. Copies at \$1 each may be had from pulley manufacturers or the association.

Handling Problems in Frozen Foods

A BASIC PROBLEM in handling frozen foods is lack of uniform retail package dimensions. That's what MHE Editor Mac McClelland reported after an exploratory meeting of The Independent Grocers' Distributing Co. in Chicago. Mac also reported this underlying

Continued on page 24



Motor, gears, all moving parts integrally designed in a compact, efficient, *one-piece* conveyor drive, to give you all these advantages:

- No space wasted on overhead V-belt set-ups. No maintenance catwalks.
- No power lost, because there's no transfer of power from external drives.
- No time spent on V-belt maintenance. Completely enclosed motor with sealed bearings cuts all service to a minimum.
- No layout problems easy installation.

SAFE

Bauer Self-driven Head Pulley eliminates all hazards due to exposed chains, sprockets, etc., and eliminates the need for space-consuming and time-consuming safety measures.

PROVED

From ½ to 25 H.P. in all standard widths, Bauer Self-driven Head Pulleys are moving raw materials, products of light and heavy industries, agricultural produce and packaged goods throughout the world. Service and parts are readily available in the U.S.

Ask your conveyor system manufacturer, or write for literature or dealership information to:

BAULER GEAR MOTORS

Totally enclosed • Fancooled • High torque rotor • Foot or flange mounting • 1/50 to 30 H.P.

FACTORY REPRESENTATIVE

Georg von Opel Corporation

15 William Street, New York 5, N. Y.

Circle 170 on Reader Service Card

NEWS

theme: the need for a uniform unit to standardize pallet sizes. He said this points up the relation of packaging and material handling. Discussion included means to reduce delivery time from producer to consumer and to reduce costs of handling and storage. The meeting drew representatives from producers, truck lines, warehousers, and distributors. Co-chair-

men were Consultant Irving Footlik, and Dr. H. C. Diehl, managing director of Trans-American Refrigerated Services.

Nutting Elects Shaft President

New president of Nutting Truck and Caster Co. is W. S. Shaft, a 32-year veteran with the company. He was executive vice president and treasurer for 7 years and plant superintendent for 10 years. Shaft will continue as treasurer.

MHI Show Goes To Central States Market



Paul A. Fisher



Charles C. Bassett



E. G. Klinstiver

"PROGRESS THRU KNOWLEDGE" is the theme of the 3-day Technical Conferences, which run during the Material Handling Institute Central States Show.

Both events will be held in the Kentucky Fair and Exposition Center, Louisville, on this schedule:

Day and Date

Hours

Tues. Nov. 1 11 to 9
Wed. Nov. 2 11 to 9
Thurs. Nov. 3 11 to 5

Thirty-three authorities will discuss material handling and packaging. Region 4 of the American Material Handling Society will run the conferences. They will be

geared to the interests of industrialists of the Central States

Four separate Conferences will be held every day from 9:00 to noon. Fees: \$10 a day for AMHS members, or \$25 for the 3-day course. Nonmembers pay \$12 a day, \$30 for the 3-day course.

Co-chairmen of the Technical Conferences are Paul A. Fisher, Anaconda Aluminum Co., and Charles C. Bassett, Belknap Hardware and Mfg. Co., both of Louisville. The conference chairman of Region 4 is E. G. Klinstiver, Falls Cities Transfer and Storage Co., Jeffersonville. Ind.

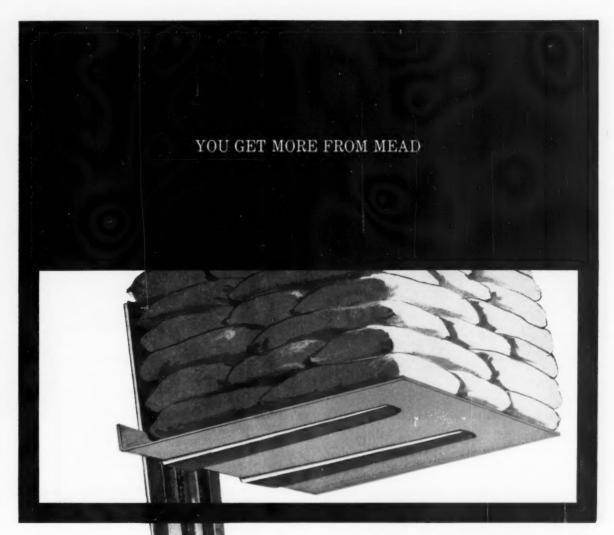
Robert Dilts, Aro Equipment Co., Bryan, Ohio is program chairman for the Technical Conferences. He says there will be a Conference registration booth open each morning. For advance registration, contact the registration chairman, Robert L. Fisher, at P. O. Box 12155. Louisville 12.

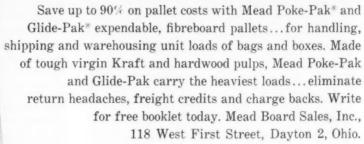
Second Regional Show—This second show is sponsored by the Material Handling Institute. Over 125 manufacturers from 21 states are expected to exhibit. The first was the New England Show, in Boston in June. Coming shows are the Pacific Coast Show, Feb. 22-24, 1961 at San Francisco, and the Eastern States Show, May 9-11, 1961 at Philadelphia. The regional shows have the approval of the American Material Handling Society, Inc., and the Material Handling Equipment Distributors Association. Show management is by Shea Expositions Corporation, Pittsburgh.

R. F. Moody, of the Hyster Co., is chairman of the show committee. Vice chairmen are: B. E. Phillips, Clark Equipment Co.; Richard Bragdon, The Bassick Co.; Clyde R. Dean, The Yale & Towne Mfg. Co.; J. B. Ellor, Automatic Transportation Co.; R. L. Fairbank, Towmotor Corp.; D. E. Hammond, The Union Metal Mfg. Co.; Wilbur Mayer, The Louden Machinery Co.; J. A. Mustard, Jr., Thomas A. Edison Industries; E. W. McCaul, Jervis B. Webb Co.; Howard M. Palmer, Lewis-Shepard Products, Inc.; Carl L. Peterson, Cleveland Crane & Engineering Co.; and George G. Raymond, Jr., The Raymond Corp.

The November issue of Material Handling Engineering will be a special show issue. We'll carry a special feature story on outstanding handling installations in Louisville.

As MHE went to press, we received the news that Paul Fisher, general chairman of the technical conference, had died. Our editors, along with many others in material handling, will miss Mr. Fisher's presence at the Central States Show. His dedication to the field was well known to us all.





YOU GET MORE FROM MEAD ...THE MOVING FORCE IN PAPER AND PACKAGING

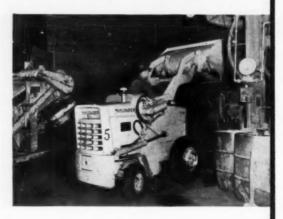


A SUBSIDIARY OF THE MEAD CORPORATION

Circle 115 on Reader Service Card



Lancaster's two H-25's windrow and mix sand on pouring floor — carry and feed to the separator — feed the muller—return sand to 58 molding stations — carry slag to dump — unload boxcars of sand.



THE FRANK G. HOUGH CO. 731 Sunnyside Ave., Libertyville, III.	8-A-3
Send H-25 "PAYLOADER" data	
☐ Larger units to 12,000 lb. capaci	ty
Name	*****************************
Title	******************************
Company	00-000-00-00-00-00-00-00-00-00-00-00-00
Street	*******************************
CitySto	ite

This Lancaster, Pa., foundry has been a "PAYLOADER" booster ever since its first one, a Model HA, went to work in 1948. Since January 1959, two of the new H-25 Models have been placed in operation. Says Clarence Hess, Foreman, "Our first H-25 had worked some 2,200 hours before we added the second one. We find these H-25's have twice the production of old HA's. They are much easier on the operator and give all-around efficient operation, because of their faster load delivery cycle and greater carrying capacity. They have outstanding maneuverability."

At Lancaster Malleable the night shift uses the H-25's to handle about 90 tons of sand four times during separate stages of stockpiling, mixing, feeding the separator and transporting sand to the 58 molding stations. The day shift uses one machine to handle slag and unload boxcars of sand.

Foundries and plants of all kinds have found that the Model H-25 is the answer for more efficient indoor bulk handling. Interchangeable attachments are also available for special jobs: sweeper, fork lift, hydraulic grab, crane hook. Write for complete data.



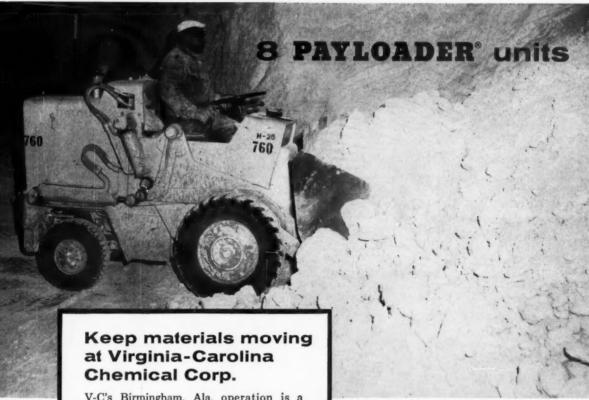
THE FRANK G. HOUGH CO.

LIBERTYVILLE, ILLINOIS

SUBSIDIARY — INTERNATIONAL MARVESTER COMPANY



HOUGH, PAYLOADER, PAYMOVER, PAYLOGGER and PAY are registered trademark names of The Frank G. Hough Co., Libertyville, III.



V-C's Birmingham, Ala. operation is a complete wet-mix manufacturing facility and includes a sulphuric acid plant. Eight "Payloader" units are used for all phases of material handling, including the charging of sulphur to the melting vat, the moving of railroad cars, unloading potash from boxcars and in-process handling.

J. F. Lotz, Plant Superintendent says of his two newest units, "The Model H-25 'PAYLOADER' units are versatile and fast in all-around plant operations. They have twice the delivery capacity of the older Model HA's, and are faster in the storage pile." Speed, capacity, maneuverability and ease of operation are combined in the H-25 for big production all day long. With only 6-ft. turning radius, it features 2,500 lb. operating capacity, power-shift transmission, torque-converter drive, power-steering, power-transfer differential and fast, powerful hydraulic bucket control. Closed, pressurized hydraulic system plus filters and seals throughout the machine assure effective protection in dusty conditions.

A nearby Hough Distributor is ready to show you what a "PAYLOADER" can do for your bulk materials handling.



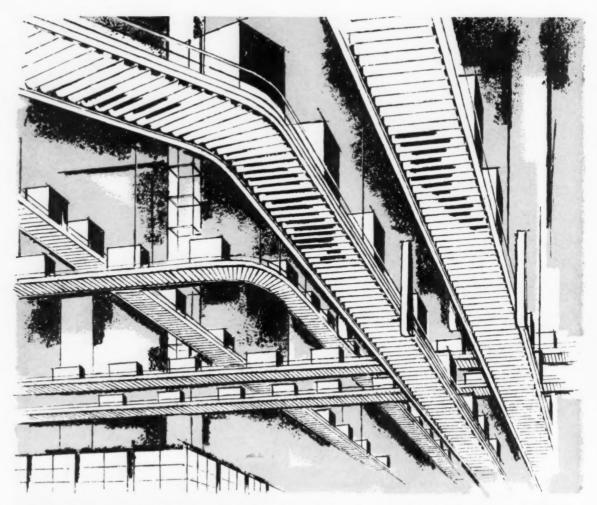
4,500 lbs. of breakout power easily digs full bucket loads of hard super phosphate.



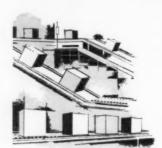
Spotting railroad cars is all in a day's work for the powerful, rugged H-25's.

HOUGH, PAYLOADER, PAYMOVER, PAYLOGGER and PAY are registered trademark names of The Frank G. Hough Co., Libertyville, III.

THE FRANK G. HOUGH C	O. 8-A
731 Sunnyside Ave., Libertyville,	III.
Send data on H-25 "PAYLO	DADER"
☐ Larger models — to 12,00	0 lb. operating capacit
Name	***************************************
Title	
Company	
Street	
City	State



DO YOU THINK YOU NEED A BIGGER PLANT?



Does your plant seem crowded? You could build a bigger one—but do you really need to?

The solution to problems like these is Alvey Conveyor's business.

Maybe your time-lags, back-up on production lines, and crowded storage areas are the result of poor coordination between the separate elements of your system—or out-of-date handling methods.

Let a team of Alvey engineers look at your layout. They can show you how to keep your material moving and your space available.

Whether you need a complete system or single material handling device . . . call or write Alvey for free consultation.



Vertical Lift Conveyors



Pallet Loaders



De-Palletizers



Air-Chain Conveyors



Telescopic Boom Conveyors



Vertical Indexing

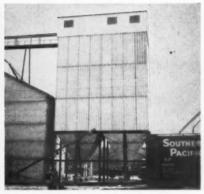
ALVEY CONVEYOR MANUFACTURING COMPANY

9299 OLIVE STREET ROAD, ST. LOUIS 32, MO. Branch Offices in Principal Cities

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the smart way to go bulk





BUTLER TANKS



BUTLER BUILDINGS



BUTLER TRANSPORTS

Planning and erecting bulk facilities the traditional way can be a costly investment in manpower and capital. The economical way to go bulk is Butler.

Pre-engineered Butler tanks and buildings can be ordered from stock. Routine engineering and costly custom fabrication are eliminated. Bolt-together assembly speeds erection. Rugged construction cuts maintenance and insurance costs.

Tanks are available in galvanized, painted or black steel or in aluminum to fit any space or volume requirement. Where purity of product and extreme cleanliness are important, Butler tanks with special coatings can be specified!

Clear-span buildings up to 120' wide, in any length and in sidewall heights up to 30' are available with galvanized steel or aluminum cover panels in natural finish or attractive factory-applied colors.

Pneumatic unloading trailers in steel or aluminum can handle maximum payloads of most any dry or liquid products easily and economically.

Whatever your bulk storage and handling needs, Butler has the smart solution to your problem. Write today for full details.



BUTLER MANUFACTURING COMPANY

INDUSTRIAL BULK SALES DIVISION

7370 EAST 13TH STREET, KANSAS CITY 26, MISSOURI

Circle 34 on Reader Service Card



CUTTING IDEAS

Loading, Unloading Speeds Unitized Handling



Pressure-sensitive tape and a unitized loading system combine to speed mechanical loading and unloading. The palletless handling technique also cuts damages. Here's how it's done, as demonstrated at the Minnesota Mining and Manufacturing Co. The system, called Unit Load, standardizes mechanically all rail, warehouse, and truck operations.

 The shipper first unitizes the load. A strip of filament tape is adhered around the top section of the load. This holds the load securely in place, serves as a cap.

 An 8-pronged fork lifts the load, transports it to special corrugated floors of trailer or rail car. The loads rest on the grooved floors.

• The fork truck can be driven

directly into the trailer or rail car, and the forks lowered into the grooves wherever desired.

The railroad car floor is divided into six compartments by steel walls. These help reduce damage from impact and shifting. No dunnage is required because each compartment holds four unitized 40 x 48 loads (or 8 if double-tiered.) Double decking requires slip sheets to allow the forks to enter.

The railroad cars have upwardacting doors on both sides of each compartment. They can be loaded from either side.

The unitized loads are easily warehoused on a special corrugated metal pallet called a portable conversion base.

Special advantage: a car or trail-

er can be loaded and unloaded by only one fork lift operator. Average loading time: less than 30 minutes, according to the company.

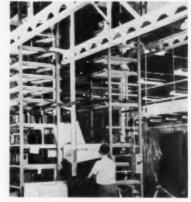
The metal conversion bases, forks, side-shifters and pushers, all a part of the system, are made by the Unit Load Car Corp.

Circle 250 on Reader Service Card

Save 70% In Floor Space

Warner & Swasey Co. at its New Philadelphia, Ohio plant keeps special tools, jigs, and fixtures available quickly. Immediate access avoids delays and cuts down inventory.

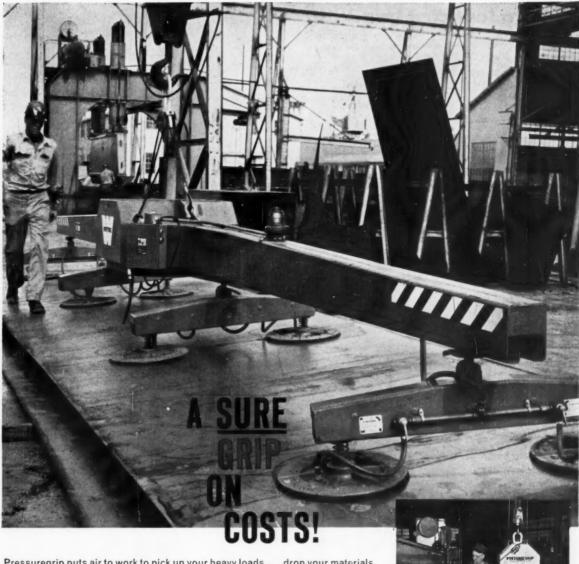
An R-46 Retriever helps them maintain this loading. It works in a single 78-foot aisle, goes from



floor to ceiling storage positions 16 feet high on each side of the aisle.

Triax, which makes the Retriever, says this one is the first to be installed with dual command (or memory) circuits. The controls enable the operator to set the Retriever to deliver one load from the head of the aisle, then, without further instructions, pick up a dif-

Continued on page 32



Pressuregrip puts air to work to pick up your heavy loads . . . drop your materials handling costs. Whiting Pressuregrip vacuum handling systems grip firmly, yet gently. Lift, spot, feed steel plate, stainless steel, aluminum without delay . . . even rough textured loads such as concrete, diamond tread plate, brick panels, plywood. Special grippers available for odd-shaped loads—rails, beams, pipe.

Designed to meet your needs, Pressuregrip is available in single units; large multiple gripper bars for fast, efficient under-the-hook operation; automatic systems. Maintenance is low. Unit is self-cleaning, self-lubricating. Find out how easy—and inexpensive—your materials handling can be with Pressuregrip. Write for Bulletins V-100R and V-101 to get the full story, or ask your Whiting distributor for the facts. Whiting Corporation, 15624 Lathrop Avenue, Harvey, Illinois. In Canada: Whiting Corporation (Canada) Ltd., 350 Alexander Street, Welland, Ontario, Canada.

One Man Efficiency! New Whiting Uni-grip vacuum handling system offers a new, low-cost way to cut machine feeding costs. Fingerlip-control unit handles up to 2000 lbs., smooth surfaces or rough. Saves time, cuts costs! Attachments to fit your application.

87 OF AMERICA'S "FIRST HUNDRED" CORPORATIONS ARE WHITING CUSTOMERS

MHITING

PRESSUREGRIP

See Our Catalog in SWEET'S

MANUFACTURERS OF CRANES; TRAMBEAM® HANDLING SYSTEMS; PRESSUREGRIP; TRACKMOBILES, FOUNDRY, RAILROAD, AND SWENSON CHEMICAL EQUIPMENT

want a low-cost handling method?

battery powered boom lift, hydraulically actuated welded construction, anti-friction bearings throughout available hand pushed or self-propelled also hand hydraulic operation for explosion hazard areas small, compact, highly maneuverable VANGUARD AFRO-CRANE

the economy counterbalanced mobile floor crane

The Vanguard Aero-Crane gets to places not accessible to other equipment. It reaches out . . . up to 72-inches beyond the front wheels, then over and into machinery without straddling the load. Space above the load need not be clear to the ceiling. The load need not be set on a pallet before handling either. Aero-crane has a 9-foot high reach: picks the load way up, brings it down to just one-foot from the floor. Other quality features are listed above.



WRITE FOR A FREE CATALOG TODAY:

MANUFACTURING COMPANY

1908 E. 66th St., Cleveland 3, Ohio Phone: HEnderson 2-0464

Circle 169 on Reader Service Card

COST CUTTING IDEAS

ferent load and return with it. Warner & Swasey keeps the more frequently used tools to the front. This cuts travel time.

The Retriever can put pallet loads of up to 1,000 lb in 768 openings. Load lengths may run as high as 36 by 24 inches.

By lengthening the aisle or by adding extra Retrievers, Warner & Swasey could make space for any number of loads.

Superintendent R. R. Atkinson points out other advantages: "It has enabled us to consolidate paper work, and to save hours of work. With fewer men to handle the tools. we have better supervision and less

Circle 251 on Reader Service Card

Poly Film Cuts Labor Cost

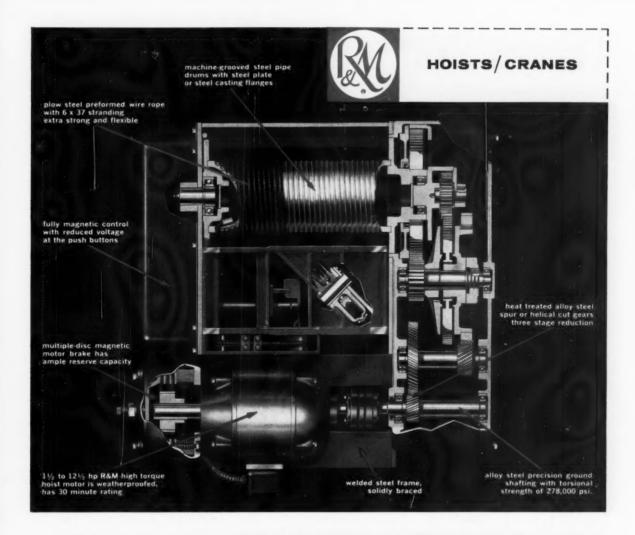
Polyethylene film is becoming a major aid to manufacturers of electronic and electrical equipment. Burroughs Corporation, Detroit, Michigan, uses Visqueen film to



protect several machines and subassemblies from the time they pass final inspection until they are delivered to the customer.

Protection from dust and dirt is of prime importance, both in shipment and storage. On adding machines and desk model bookkeepers, Burroughs has inspectors place film over them to indicate approval. From inspection, they're sent through the plant for final pack. The plastic protects the products during this trip, and maintains visibility for the product at the same

Since it is easy to handle in bag Continued on page 34



LOW HEADROOM HOIST FOR HARD USE

Robbins & Myers heavy duty Type F hoists have compact, beam-hugging profiles to save overhead space in your plant. For example, the F-2 has a headroom of only 17", yet provides 2 ton lifts on a path of steel extending from beam to hook. And F hoists are built for toughest use: frame is welded steel, alloy steel gears are heat treated, ball and roller bearings are used throughout. Weatherproof R&M 220/440 v.a.c. motors-to 121/2 hp-drive through three gear reductions. These are the hoists to choose for day-after-day production lifting where maximum dependability is important. You can standardize on F hoists throughout your plant because the line is as economical as it is broad: capacities-1/2 to 10 tons, mounting-lug, plain or geared hand trolley, 3 types of motorized trolleys. Request Bulletin 920. Hoist & Crane Division of Robbins & Myers, Inc., Springfield, Ohio or Brantford, Ontario.



ROBBINS & MYERS

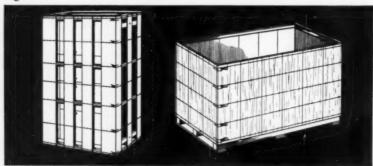
hoists & cranes, Moyno® pumps, motors, Propellair® fans Circle 146 on Reader Service Card

More Rugged than Nature's Best!



SUPERSTRONG WIREBOUND BOXES AND CRATES

Tough, resilient, used to plenty of hard knocks... Superstrong Wirebound Boxes and Crates are virtually unbeatable for functional dependability. That's why it will pay you to get the facts from a Superstrong Wirebound engineer.



CORRUGATED FIBRE BOXES





CALL CAnal 6-0973 or write Dept. 300

RATHBORNE, HAIR & RIDGWAY BOX CO.

1440 West 21st Place . Chicago 8, Illinois

REPRESENTATIVES IN ALL PRINCIPAL INDUSTRIAL AREAS

Circle 133 on Reader Service Card

CUTTING

or sheet form, labor costs have been cut by more than half in Burroughs packaging operations. The company also covers large equipment with the film for added protection before final packaging. The film is made by Visking Company, Division of Union Carbide Corp.

Circle 252 on Reader Service Card

Cleaning Time Cut In Half

Twenty refrigerated trailers just added to the fleet of Apex Express Co., Perth Amboy, N.I., are lined



with Royalite. This is a thermoplastic with low thermal conductivity, developed by United States Rubber Co.

The trailers are used for meat deliveries to eastern seaboard States. Each trailer has 300 hooks, handles up to 38,000 lb of meat. The interior is 35 feet long.

Cleaning time of a trailer interior is cut in half. It used to be a 4-hour job. The Royalite stays flexible even when very cold. It is high durable, unaffected by grease and oils. The trailers have aluminum exteriors and floors.

Circle 253 on Reader Service Card

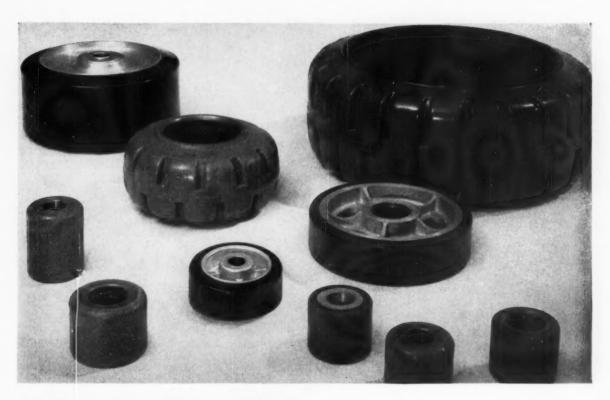
Clay Handling Time Cut 65%

Almost 100 million lb a year of spray-dried clay are used by New York & Pennsylvania Co. at its various mills.

Until recently, this clay came in 100-lb bags. It took four men a full day to unload a carload of 600 bags. This was not only time-con-

MATERIAL HANDLING ENGINEERING

Continued on page 36



For Heavy-duty Industrial Wheels...

ADIPRENE® Outlasts Other Materials, Carries Heavier Loads at Lower Cost!

These wheels are just a few of the many, many types currently being made from Du Pont ADIPRENE—the quality urethane elastomer designed to give long, economical service under conditions where rubber and other materials fail rapidly. Solid tires, caster and pallet wheels made from ADIPRENE carry far heavier loads; outlast conventional rubber wheels many times over. Yet they're resilient; won't mar floors.

ADIPRENE polymers combine resilience with high hardness and load-bearing capacity... give wheels the ability to carry heavy loads without chipping, gouging or chunking. They offer outstanding resistance to abrasion and im-

pact, withstand attack by oil, grease, ozone, oxygen, salt solutions and dilute mineral acids. They also perform well at low temperatures (brittle point is below -80° F.).

ADIPRENE wheels are now available in a wide range of sizes and types from leading manufacturers throughout the country. Learn how this new Du Pont elastomer can help you increase efficiency and reduce maintenance costs in your plant.

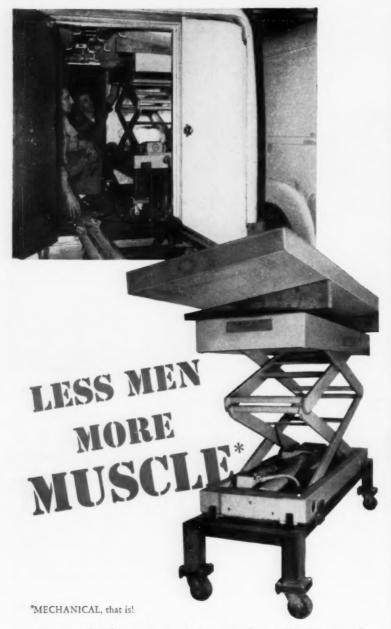
Write for full information and a list of suppliers to: E. I. du Pont de Nemours & Co. (Inc.), Elastomer Chemicals Department MHE-10, Wilmington 98, Delaware.



ADIPRENE

URETHANE RUBBE

Better Things for Better Living . . . through Chemistry
Circle 54 on Reader Service Card



It once took eight strong men to jockey each of two cold-hold units and install them in the roof of a refrigerated truck at Metropolitan Body Company, a subsidiary of International Harvester Company. Now two men do the job more safely and more quickly . . . releasing valuable labor-time for more productive application.

This is typical of how the mechanical muscles of a Southworth Lift Table† solve materials handling problems in industry after industry. The Model LH 2-57S illustrated has a load capacity of 1,000 lbs., a reach of 57". Why not talk to a Southworth engineer about increasing the efficiency of work positioning in *your* plant? Write or call:

TPATENT PENDING



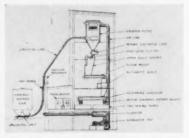
SOUTHWORTH LIFT TABLES

a division of SOUTHWORTH MACHINE CO., 1030 Warren Ave., Portland, Me.
Circle 152 on Reader Service Card

COST CUTTING IDEAS

suming, it also lead to a loss of clay through mishandled bags.

Both filler clay and coating clay are used in paper making. Increased industry demand for coated stock



created a need for larger quantities of coating preparation than manual clay handling could meet.

Today, the plant has an automatic Fuller Co. system built into a new clay preparation tower. One man at a master control can unload 25 tons of clay an hour.

This tower is built alongside a railroad siding. Covered hopper cars, holding 50 tons of clay divided into two sections, pull up. Workers attach a dual-feed unloader to the gates under the car. After hooking up air and conveying line hoses, and opening the car outlets, the operator simply starts the blower.

Circle 254 on Reader Service Card

Pneumatic System Handles Stabilizer

The Joliet, Ill. plant of Ruberoid Co. coats roofing felt with hot asphalt mixed with a pulverized stabilizer material to make shingles. This stabilizer material arrives in 17-ton hydraulic lift trucks.

Until recently, the truck driver dumped the material into a large receiving hopper at floor level in the plant until the hopper was full. He then had to wait until it was empty enough to dump more of the load. The mechanical system could not empty the receiving hopper fast enough to let the truck dump continuously.

The company was put out by the high delivery prices they were pay-

Continued on page 40



The standard of the industry

Four short years ago this fork truck was only a dream in the minds of thousands of materials handling engineers, plant operating people, and fork lift operators across the country. Today the Clarklift® is the most widely accepted truck in the industry.

How does this fork truck become the standard of the industry in four short years?...by having the inherent qualities and design features that materials handling experts want and need.

Before the first pencil line was drawn to design this new fork truck, the Clark Equipment Company surveyed thousands of plant operating people. The results were tabulated . . . and after thousands of engineering and test hours and millions of dollars . . . the Clarklift was completed and introduced.

Since its introduction, the Clarklift has become the standard of the industry. Today more Clarklift fork trucks are sold than any other fork trucks.

For more information on the Clarklift . . . or, better yet for a demonstration . . . contact your local Clark

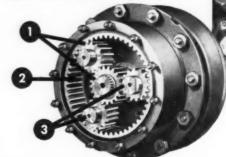
dealer. He's listed in the Yellow Pages. Or, write Clarklift, Clark Equipment Company, Battle Creek, Michigan.





Rockwell's refined full planetary design has these exclusive features:

- FLOATING RING AND SUN GEARS assure equal distribution of stresses to all planetary gears.
- 2. CONCENTRICALLY MOUNTED RING GEAR allows perfect alignment and fit—plus freedom of bending forces on hub and spindle splines.
- 3. FORGED ALLOY BRONZE PLANET PINION PINS have rifle drilled lubrication channels and machined lubrication flats to assure full-time lubrication.
- FULL FLOW LUBRICATION design gives constant flow of lubricant to wheel bearings and all planet gears while vehicle is in operation.



"TIMKEN-DETROIT"
PLANETARY AXLES

BEST DRIVE FOR THE HEAVYWEIGHTS!"

Here's new rugged dependability for prime movers, four-wheel tractors, heavy off-road wagons, mining and agricultural equipment, and many other heavy-duty applications. Rockwell-Standard's complete line of planetary axles are available in capacities up to 150,000 pounds. And to meet every job need, there is a planetary steering axle operationally matched to each rigid planetary in the line.

The large reductions possible with Rockwell's full planetary, double-reduction axles enable them to ideally perform most heavy-duty off-highway operations. Because the substantial planetary reduction is located in the wheel hub, axle shafts and first reduction gears carry only nominal torsional loads—give long trouble-free service. For the best heavy-weight drive, specify Timken-Detroit.

Another Product of.

ROCKWELL-STANDARD

R STANDARD ®

Transmission and Axle Division, Detroit 32, Michigan

Circle 140 on Reader Service Card

JOINS WITH EXICE TO BRING YOU A NEW DIMENSION IN QUALITY AND SERVICE PLUS THE MOST COMPLETE LINE OF PACKAGED POWER ON THE MARKET TODAY!

■ Edison Storage Battery Division, for more than 50 years, has been the foremost manufacturer of the quality Nickel Iron Battery — the original alkaline storage battery invented by Thomas A. Edison. Recently, Edison introduced a Nickel Cadmium Battery for industry and railroads.

■ Exide, for more than half a century, has been an important supplier of other types of packaged power. ■ The union of these two great names in industrial and railroad batteries now offers customers and potential customers of both companies a new dimension in battery satisfaction. ■ Field and Service Engineers of both companies — the new Nickel Alkaline Battery Division and the Exide Industrial Division throughout the country — stand ready to serve you as before. ■



NICKEL ALKALINE BATTERY DIVISION

The Electric Storage Battery Company

West Orange, New Jersey

SAVE

On Materials Handling Equipment with a

RYDER EASE

Why let your watch tick away money when materials handling equipment is down? With a Ryder Lease, Time-Money problems caused by down-time are off your desk for good. Ryder leased equipment is ready to work for you all around the money clock. Ryder's expert preventive maintenance keeps your leased equipment running -removes most of the causes of breakdowns, and standby units are always ready to handle the unexpected.

All you do is budget a monthly economical lease rate which can include auto and truck rental, if you wish.

Isn't it about time you wrote for the "Full Story" from . . .

RYDER TRUCK RENTAL

P.O. Box 33-816. D-21, Miami, Florida



DIVISION OF RYDER SYSTEM Circle 145 on Reader Service Card

COST CUTTING IDEAS

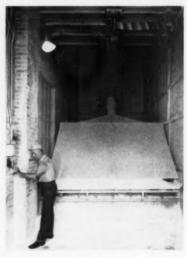
ing because of the drawn out unloading and concern over dust. They bought an enclosed Fuller Co. pneumatic system for handling the stabilizer material. They used the existing receiving hopper, process bins, and storage silo. In fact. they made the installation without altering plant layout.

Now the material goes from the receiving hopper, through a motoroperated rotary valve, to the hopper of a fluidizing pump that conveys it under low pressure. Con-

veving route includes a vertical rise of over 50 ft and then 178 ft horizontally to three process bins. Once an operator pushes the button to lift the receiving hopper cover (photo) the system is com-

pletely automatic. The 1-man con-

trol released three for other work. A delivery truck can unload 17 tons in only half an hour, prices



are lower because there is less waiting time. No dust escapes from the totally-enclosed system.

Circle 255 on Reader Service Card

Plastic Conveyor Belt For Food Industry



Permagloss, a 100% plastic belt, is offered to the food industry by Lassiter Corp., New York City.

The smooth surface of the belt imparts a gloss to the bottoms of chocolate-covered candy and baked goods products.

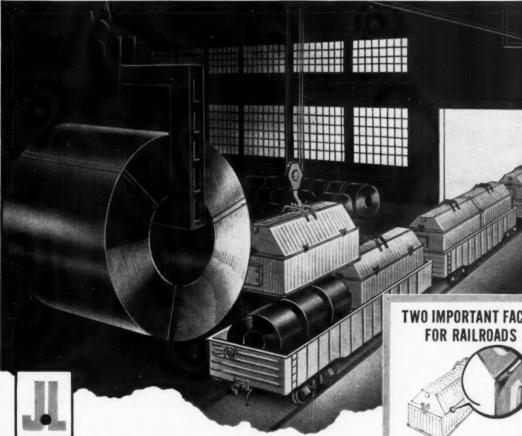
The Goldenberg Candy Co., Philadelphia, has been using two belts made of Permagloss for a year. They are 32 inches wide and 128 feet long, work in constant temperature tunnels at 40 degrees.

A special advantage: the belting cools faster because Permagloss dissipates heat faster than fabric belts. The Goldenberg Co. reports that the plastic belts last half again as long as belts they used before.

Other advantages: Permagloss has excellent release characteristics which speed up production with a minimum of rejects. It is easily cleaned.

> Circle 256 on Reader Service Card Continued on page 42

MATERIAL HANDLING ENGINEERING



YOCAR HOODS HELP J & L SOLVE SHIPPING PROBLEMS

Use of Yocar hoods on shipments of high quality steel coils provides savings of "\$25 to \$30" per car loading according to JONES & LAUGHLIN STEEL CORPORATION, ALIQUIPPA WORKS DIVISION, ALIQUIPPA, PA.

Costly dunnage and paper wrappings are eliminated - damage claims show drastic reduction — and the perfectly balanced YOCAR HOODS permit easy positioning with minimum manpower. Positive protection from weather, dirt and vandalism is also provided.

Helping you SHIP SAFELY AT A SAVINGS is YOCAR'S goal. Why not do something about your profit-reducing shipping problems? Specify YOCAR protection next time you ship by rail.

OTHER YOCAR SAFETY **DEVICES** Safe-Cargo Anchor Rails for piggy-back trailers

Yocar 3-section Removable

Yocar Safe-Cargo Econo-Guard increases car wall life

RoLLoK Movable Bulkheads

YOUNGSTOWN STEEL CAR CORPORATION . NILES, OHIO

Circle 182 on Reader Service Card

TWO IMPORTANT FACTS



SEAM-LOCK construction eliminates upper welded seams, where water accumulates, insuring weather-tight protection throughout the hood life. Added strength to the entire hood is achieved due to the rigidity and durability of SEAM-LOCK'S design.



CORNER-STRENGTH . . . A new corner construction makes YOCAR hoods the strongest and best constructed hoods available today. Double backing on each corner insures longer service life, for it is here that gondola hoods take the most constant beating from humping and shifting in transit.



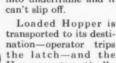
Send for new catalog today and see how Yocar can help you solve your shipping problems.



Here's the fastest, lowest cost method of handling bulk materials and small parts-hot or cold, wet or dry.

One man with a Roura Hopper can do the work of two and do it in half the time. Loaded Hopper is picked up

by the truck operator in matter of seconds. Platform or forks slip into underframe and it



ings, cinders and aggre-



Hoppers are now in use handling scrap metal, hot forgings and cast-

LOCKS ITSELF

DUMPS ITSELE

gate, pickles—and dozens of other items. They're made in eight sizes, 1/3 to 4 yards capacity. Built of 316" steel plate with continuous arc-welded seams. Heavier plate if desired, also stainless steel or galvanized. Mounted on live skids or with a choice of wheels. Can ship standard models immediately.

ASK FOR BOOKLET. Just clip this coupon to your letterhead and mail. We'll send illustrated literature. No obligation.

ROURA IRON WORKS, INC. 1411 Woodland Ave., Detroit 11, Michigan

Circle 143 on Reader Service Card

COST CUTTING IDEAS

Space Saver

Notice anything unusual about this photo of Stack-n-Nest pans? It was taken at the Harvey Hubbell, Inc. plant in Bridgeport, Conn.



There are no pallets or skids, yet the pans are loaded and they're stacked 17 high. Hubbell says they can take full advantage of the stacking feature of the pan. They use a ladder, and go that high because the pan contents are light. The pans are made by the G. B. Lewis Co.

Circle 257 on Reader Service Card

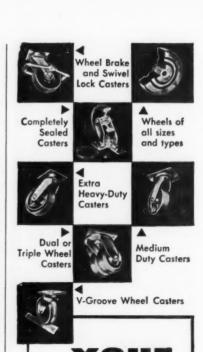
Palletizing Cuts Loading Time

A new in-the-car palletizing method for bagged products lets



one man now pallet-load a 25-ton box car or a 20-ton truck in less than an hour.

Pallets are lined up against the car walls and laid flat as loading progresses. Or they're placed in



ALBION industrial.

Albion casters checkmate your materials handling problems. They are versatile, dependable, economical and available right now. Whether you need a caster for light, medium, heavy or extra heavy duty requirements-standard or special-Albion casters are the practical answer.

Albion casters are available in every conceivable range of Industrial size, type, capacity and desired wheel type to suit your needs.

Make the best move...get all the facts on Albion Casters today. Write, wire or phone for the information you need. Albion is always at your service.

Do it now . . .

request your copy of the Albion Caster and Wheel catalog. Yours for the asking.



Distributors in Every Strategic City MAIN PLANT: ALBION, MICHIGAN Circle 2 on Reader Service Card

MATERIAL HANDLING ENGINEERING

COST CUTTING IDEAS

shipping position and a Power-Curve flexible loader is walked, under power, into the end of the car over the pallets. Wide-tread pneumatic wheels permit use of wood pallets.

Push-buttons control loader movement into car ends, the bag travel and direction, and stacking height. Palletizing speed is up to 24 bags a minute with one operator. A truck can be loaded with 500 bags in 30 minutes. Any pattern of palletizing is possible with this high speed equipment.

Circle 258 on Reader Service Card

Automatic System Doubles Production

A push-button bulk material handling and storage system has more than doubled the 40-ton per day production capacity for F. M.



Brown's Sons, Inc., Birdsboro, Pa. Moreover, no additional mixing facilities had to be installed.

The automatic system saves money. They use it to handle and store soybean meal, gluten feed, bran, etc. One man can now unload a car in three hours. It used to take a crew of four to six men that time to do the job. Buying in bulk saves up to \$3 a ton.

The bulk discharges automatically from cars into Permaglas storage units that resemble silos. There are six of them. Mechanical sweep-

Continued on page 46

The truck with "boarding house reach" INCREASES WAREHOUSE CAPACITY

... as much as 50%



THE RAYMOND CORPORATION

3331 Madison St., Greene, N. Y.

Please send Bulletin on Raymond Reach-Fork, I am interested in:

- 2,000 lb. cap. Reach-Fork.
 3,000 lb. cap. Reach-Fork.
- ☐ Have a representative call.

MAIL COUPON TODAY

Circle 134 on Reader Service Card

NEW RAPISTAN APC CONVEYORS SERVE WHOLESALERS, RETAILERS, INDUSTRY

A FINGER'S TOUCH



Industrial applications of Repistan APC equipment include this wheel-type conveyor that moves freshly packed butter from the packaging area into the cooler. Orderly accumulation of cartons permits intermittent unloading under uncomfortable low-temperature conditions in the cooler.



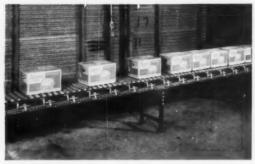
Cartons are stopped without stopping the APC live-roller conveyor, a feature which makes APC an ideally suited conveyor for filling and packing operations involving accumulation of large, heavy items. In this situation, cartons are loaded and packed right on the conveyor line.

accumulates packages with no pressure build-up!

And when you release your finger, only the first carton moves
... then the next ... etc. This is SINGULATION, another exclusive
Rapistan APC (Adjustable Pressure) Conveyor feature providing much lower
power requirements and longer belt life. Combined with low-pressure accumulation
under power, the result is a conveyor that safely handles any mixture of carton
and container sizes and shapes. Fragile materials can share the ride with
heavy, bulky materials without harm. Complete safety is assured for operating
personnel, containers and contents. Production and handling efficiency and low-cost
operation result. Detailed information on how Rapistan APC Conveyor, both
wheel and live-roller types, are benefitting every type and variety of industrial, service
and distribution operation is available for the asking.



Rapistan APC (Adjustable Pressure) Conveyor plays an important part in the distribution of incoming merchandise in this department store. Accumulation, checking and sorting processes are served with exceptional efficiency in distributing goods to marking and sales storage areas in the large store.



One of the original live-roller APC conveyor installations by Rapids-Standard is this beer warehousing operation. Cases can be seen moving at orderly intervals on the left and accumulating under power without pressure build-up. Hands are easily and safely inserted between cases for removal from line.

Rapistan_®

The RAPIDS-STANDARD COMPANY, Inc.

705 RAPISTAN BUILDING

GRAND RAPIDS 2, MICHIGAN

Circle 13 on Reader Service Card



Are you having trouble protecting precision parts from RUST and CORROSION?

The answer may be Cleveland Containers with liners treated with VPI ... Vapor Phase Inhibitor ... which are both economical and highly effective against corrosion.

Use of VPI containers also have three extra money-saving advantages:

- 1. Eliminate the need of heavy protective oils or greases.
- 2. Parts are clean and ready when removed from the VPI container.
- 3. No loss of the rust-preventing VPI factor when parts are removed or replaced.

Constructed of quality fibreboard with metal ends, the 2-piece containers, shown above, are made in a wide range of diameters and lengths to "fit" a specific part or product. VPI containers can be labeled with preprinted wrappers, direct printing, or plain color wraps.

For detailed information about these containers, write our nearest plant.

THE

Chicago Memphis Los Angeles Plymouth, Wis. Jamesburg, N. J. Fair Lawn, N. J.

Plants and Sales Offices: 6201 BARBERTON AVE. • CLEVELAND 2, OHIO

ALL-FIBRE CANS - COMBINATION METAL AND PAPER CANS SPIRALLY WOUND TUBES AND CORES FOR ALL PURPOSES

CLEVELAND CONTAINER CANADA, LIMITED Plants & Sales Offices: Toronto & Prescott, Ont. - Sales Office: Montreal

Circle 41 on Reader Service Card

New York City Washington, D.C. Rochester, N. Y. West Hartford, Conn.

Abrasive Division at Cleveland

COST CUTTING IDEAS

arm bottom unloaders move the feed into the pneumatic system to one of 11 holding bins. It is then spouted by gravity to a scale and into the mixers. A. O. Smith Corp. makes the mechanized storage

Circle 259 on Reader Service Card

Storage Space Doubled

Storage space has been doubled and order picking has been made easier at Powell's, Inc., Hopkins, Minn, candy manufacturer.

"We have put our empty air space to work with Tier-Rack", reports George Hedin, warehouse manager, "and have actually more



than doubled the amount of storage space available in our present warehouse."

Before Powell used the portable pallet stacking frames, cartons were stacked on pallets one high around the warehouse. Since orders were picked from these pallets, there was no way to use the ceiling space. Merchandise was spread over a wide area, and required long runs for order-pickers. Restocking was also a time-consuming operation.

Now stacking is fast, orderly. Pallet loads are easily moved, and an additional advantage is layout flexibility. Layout can be changed in minutes to meet changing storage demands. Made by the Tier Rack Corporation, the frames can be moved quickly by fork truck.

Circle 260 on Reader Service Card

Stockrooms On Wheels

Maintenance men often lose time because they can't find what they need in the jumble of materials

Continued on page 48



What business does a lift truck manufacturer have making electric motors?



FIRST in Imagination . . .
FIRST with Reality

You would have to look far and hard to find an application that is tougher on electric motors than driving lift trucks.

Inching, frequent starting and reversing, climbing ramps with full loads on the truck, long work cycles—these are all factors that cause an electric motor to overheat. And it's extreme heat or long periods of heat that breaks down the insulation in ordinary motors and results in shorts and burn-outs.

This heat can't be avoided if you run an electric truck at its full work capacity. But it can be compensated for by using components designed to withstand high temperatures. This calls for a very special kind of motor—one which is specially wound and insulated. In addition, our engineers have set up motor performance standards that are so exacting that com-

mercial units meeting these requirements just aren't available for heavy duty operations

So we make our own motors for all heavier duty trucks. We use special wire, special solder, and silicone insulation capable of withstanding temperatures above 450°F to meet the standards of Class H requirements, one of the highest specifications to which motors can be built.

This extra quality in AUTOMATIC motors means maximum protection against motor burn-out. It means increased work capacity of the truck. It means long, maintenance-free truck life. And it's just one of the bonuses you get in all AUTOMATIC heavy duty lift trucks. Ask your AUTOMATIC dealer to tell you about the many other "extras." He's listed in your phone book.



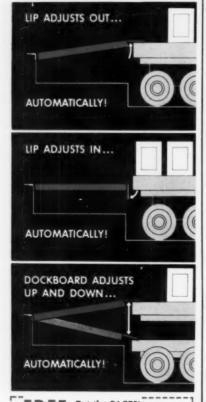
AUTOMATIC TRANSPORTATION COMPANY

Division of The Yale and Towne Manufacturing Company
141 W. 87th ST., DEPT. TO, CHICAGO 20, ILL.

Circle 9 on Reader Service Card



Whether you're at the blueprint or "just thinking" stage, you need Kelley's brand new reference booklet on loading dock layout. It provides important data on driveway, aisle, canopy and door requirements, dock heights, current truck-trailer dimension restrictions, etc. Also, includes complete specs on industry's No. 1 Adjustable Dockboard—Kelley's ADJUST-A-LIP. Make yours a modern, efficient and safe dock operation. Act now! Mail coupon today!





2139 W. MILL ROAD
MILWAUKEE 9, WISCONSIN
Circle 98 on Reader Service Card

COST CUTTING IDEAS

carried in their service trucks. Work slows down, and labor costs go up.

One large Southern company decided to start a new system of



truck storage. The system increases efficiency and lowers the cost of each job.

Key to the system is the new service truck shelving supplied by Penco Division, Alan Wood Steel Co. Standard parts come supplied in knocked-down form. Each unit has widely adjustable shelves and bin dividers. The company's maintenance department assembled and installed the shelving for each truck in only an hour and a half.

Now the company stocks each truck uniformly according to a standard truck inventory card. They charge off parts on a truck inventory card.

Circle 261 on Reader Service Card

Loading Time Cut 50%

Rogers Brothers Company, Idaho Falls, Idaho, uses steel strapping to



unitize cases of canned food. Previously, cases containing six No. 10 cans were handled individually.

This resulted in three rehandling and restacking operations.

Now cases are unitized into tight, secure warehousing and shipping packs that eliminate rehandling and restacking. Packs stack higher and neater, make better use of storage space. Company says the unitized packs have cut box car loading time 50% because they permit full use of handling equipment.

A corrugated bottom cover is laid on a grooved strapping jig. Total of 54 cases are positioned, then covered with corrugated. Openings are left for fork lift entry. Two lengthwise straps of % inch x .020 inch Steelstrap, fed from an Acme Steel E25AO Reel Stand are tensioned with a B5B6 Stretcher. They are sealed by a No. 61 Seals and a C3A6 Sealer.

Circle 262 on Reader Service Card

Packaged Homes Carried To Sites

By using Hyster Straddle Truck carriers to transport building supplies direct to homesites, Phoenix Development Company, Omaha,



Nebraska, saved 43 percent in handling costs, compared with previous handling methods.

The savings were made by completing the project ahead of the normal schedule. Only 8 months were required to erect 258 homes on a 55-acre tract.

Two Straddle Truck carriers transported all building supplies from a rail siding over a mile away to an assembly area. Here, all lumber was cut to size. Complete packages were placed on bolsters and, along with all necessary component materials, were transported to the actual homesite.

During construction, the carriers handled over 2,750,000 board feet of lumber, five boxcar loads of insulation, over 70,000 lb of nails, two boxcar loads of doors, and some 6,000 windows from railroad site to assembly and homesite.

Circle 263 on Reader Service Card

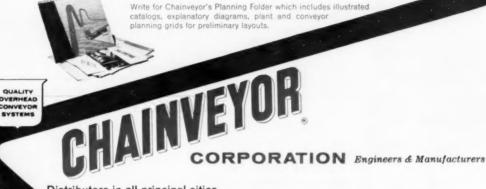
AUTOMATIC OVERHEAD_ROUTE CONTROL



The Times Mirror Press, largest printing plant for telephone directories west of Chicago, circulates trays of type, galleys, proofs and other printed matter on a versatile overhead power and free conveyor system.

From one of eight work stations an employee can send loaded basket carriers to any of the other stations throughout the entire system. Automatic control of routings is accomplished by setting an index tab on the carrier for the station desired. Carriers bypass all stations until the tab contacts a limit switch at the station for which it was indexed. The carrier automatically comes down to worker level and stops in the correct loading and unloading position. After unloading and/or the addition of new material in the basket the operator can re-set the index tab for further routing. An index setting on the carriers also provides a bank of empty baskets which constantly circulate throughout the system. Any operator can bring down an empty basket on command.

The accomplishments demonstrated by this and other power and free Chainveyor combinations offer infinite opportunities for more efficient, lower cost distribution and materials handling techniques.



Distributors in all principal cities.

District offices: Chicago, Jacksonville, Newark, New Orleans, Pittsburgh, Syracuse Main Offices: 5618 East Washington Blvd., Los Angeles, California

Circle 38 on Reader Service Card



PRODUCT NEWS

Entrant To Fork Lift Field

Series 4000 heavy duty fork lift is joint effort between Tractor-Mate Inc. and Ford Motor Co. Powered with 172 cu in engine, gas or diesel. Four stacking heights: 10' to 21'. The 10' and 12' models handle 4,000 lb. Adjustable forks, a side-shifter, and



face plates available. Features include low center of gravity, power steering, excellent flotation on wet, uneven ground. Primarily an outdoors, rough terrain hauler, says the maker. Wide interchangeability of parts with regular tractor.

Ford Motor Co.
Circle 300 on Reader Service Card

Compact 180° Conveyor Turns

Power turntable makes 180° turns in conveyor lines, needs only 48". Motor-driven steel plate revolves on



nylon wheels. Steel guides align products around turn. Any degree of turn feasible to 180°; multiple en-

trance and exit points for complex systems. Cost said to be low.

Metzgar Conveyor Co.
Circle 301 on Reader Service Card

Spots Loads Precisely

Hydra-Set goes between any crane hook and load; raises or lowers 100 tons for 12 inches with 0.001-inch accuracy. Needs no external power. Use it for fast, accurate load positioning, weight or strain indication, a rigging aid. One ton to 100 ton capacities.

Mefco Sales & Service, Inc.
Circle 302 on Reader Service Card

Dock Goes To Boxcar

Mobile yard ramp moves easily into position at boxcar or highway trailer. Lift trucks enter carrier easily from

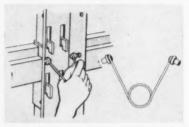


ground level. Ramp 36' long when elevated to carrier bed that's 56" high, has grade of 8°. Magnesium alloy construction with steel undercarriage; carries 50% shock overload. Deck runs full width of ramp, is made of self-cleaning aluminum grating. Hydraulic lift system, hand operated, raises ramp fully in 45 secs. Lift range: 37" to 63". Capacities to 20,000 lb.

Lite-Line Metal Industries
Circle 303 on Reader Service Card

Positive Locks For Storage Racks

Ridg-U-rak storage rack beams and upright posts lock positively by means of Pinch Pins. Pins snap into matching holes in columns, engage hook pads to stop all vertical movement. They're easily removed for respacing of beams. You compress them with



your hand. Once in place the pins turn up or down, nest inside channel out of sight.

Bernard Gloekler North East Co. Circle 304 on Reader Service Card

Dozer With Power Angle Or Tilt

Model 310 utility crawlers come with power angling or power tilt blades. Control is hydraulic from the tractor dash. Angling is 25° to right or left. Tilt goes to 11 in below grade,

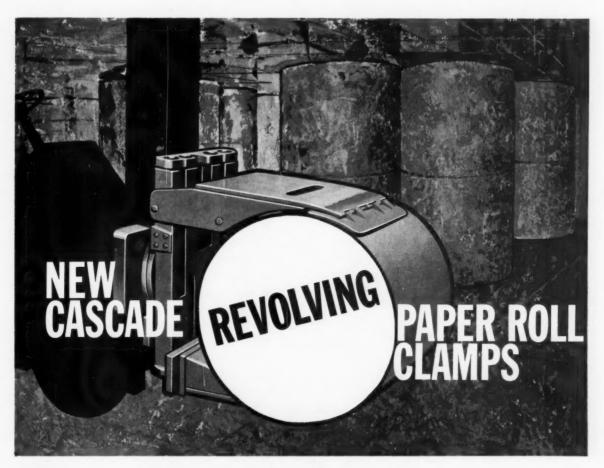


left or right. Tractor keeps moving in either case; operator stays seated to save time.

J. I. Case Co.

Circle 305 on Reader Service Card

For more PRODUCT NEWS turn to page 110



10 new job-tested improvements

It's what's up front that counts in paper roll handling, too. And, count these features available only on the new Cascade clamps.

1. New low-friction peripheral bearing design!
2. Field lubrication greatly reduced—no grease damage to paper rolls!
3. Exclusive swinging arm design for small roll pick-up!
4. Self-adjusting cylinder packing!
5. New internal design of cylinders eliminates damage from scouring!
6. Thin arms for easy entry between rolls!
7. Controlled articulation of contact plates prevents roll damage!
8. Positive safety-checked

clamping pressure! **9**. Adjustable restrictors allow equalization of arm travel. **10**. Adjustable cylinder stops prevent roll end damage!

Choice of rotation: 90, 180, 270, 360! Three different arm combinations! Four basic models —20B, 40B, C5P, 60B. Cascade Attach-man service provides additional sizes or modifications for special jobs.

Take a load off your mind. Handle your paper rolls with a new Cascade clamp. Cascade attachments are sold through all lift truck manufacturers and their authorized dealers.



The Business End of a Lift Truck is our Business!

Sales and General Offices: P. O. Box 7587, Portland 20, Oregon Plants: Portland, Oregon; Springfield, Ohio; Amsterdam, The Netherlands

cascade manufacturing company

Circle 37 on Reader Service Card

Slash handling costs outside, inside, all around the job!

NEW FORD 4000 HEAVY DUTY FORK LIFT...

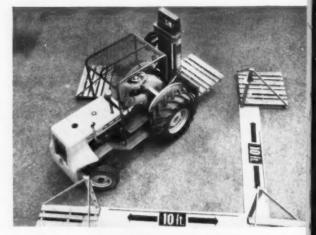
- 4.000 lbs. rated load at 24" load center.
- 5,000 lbs. rated load at 15" load center.
- Equals or exceeds fork lift industry recommendations for stability and capacity.
- Stability, ruggedness and traction for fast, safe material handling on rough terrain.
- Designed to cut outdoor and indoor handling costs of building contractors, industrial plants, concrete product producers, building supply yards, loggers.
- Choice of gasoline or diesel engine with 172 cu. in. displacement.
- Standard stacking heights 10, 12, 16 and 21 ft.
- Two and three stage masts.
- Adjustable forks, 42" and 60" face plates.
- 14 x 24 eight-ply drive tires for solid traction, good flotation.
- 7.50 x 16 eight-ply steering tires.

- 4-speed reversing transmission; up to 15 mph transport speed.
- Rugged full length frame.
- 7,000 lbs. capacity steering axle.
- Total weight, with 4,000 lb. load approximately 13,700 lbs.
- 2,300 lbs. cast bumper-counterweight.
- 15-gallon capacity gear type pump.
- Stack type 3-spool control valve.
- 6" side shift, standard equipment.
- Mast tilts 13 degrees back, 7 degrees forward (tilt angles reversible with special attachment).
- Safety valve prevents accidental free fall of carriage.
- Adjustable cushioned seat, convenient controls and full hydraulic power steering boost operator efficiency, minimizes fatigue.
- Excellent operator vision.

Ford Motor Company



Customized attachments – Standard accessories include overhead guard and load guards for 42" or 60" face plates. Special purpose attachments and masts available on special order basis.

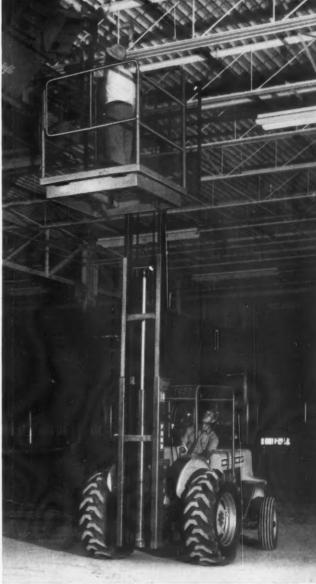


Excellent maneuverability—Full hydraulic power steering, individual drive wheel brakes and a tight 11 ft. turning radius are typical of the many features which give Ford excellent mobility.

High and inside... Five basic models of the new Ford heavy duty fork lift truck are available in 10 ft., 12 ft., 16 ft. and 21 ft. lift heights. The 12 ft., 16 ft. and 21 ft. models have 3-stage telescoping masts; 2-stage masts are available for 10 ft. and 12 ft. models.

... or low and outside—Ford's 3-stage masts provide high lift with unusually low collapsed heights. For instance, the 3-stage 12 ft. model collapsed height is only 6'5". Even with the overhead guard, the unit will still enter an 8' door. Ford can work both outdoors and indoors for you—can eliminate, in many cases, the need for separate indoor and outdoor units!





Your copy of the new Ford Fork Lift Specifications is ready for mailing!



FORD
TRACTORS AND EQUIPMENT

FOR 101 INDUSTRIAL JOBS

2500 E.	otor Company Maple Road gham, Michigan
☐ Send	Ford Fork Lift "spex"
Name _	
Compan	у
Position	
Street	
City	State

"Our materials handling efficiency jumped 30%!"



Motorola "Dispatcher" 2-way radio ends lift truck "dead-heading" at Lennox Industries

No wonder Tom McRae, Time & Methods Dept. Mgr., is enthusiastic about his new Motorola Industrial "Dispatcher" 2-way radio system. It has not only increased lift truck productivity to almost 100% efficiency, but will actually pay for itself in a few months! This fact alone is a tremendous boon to companies in highly competitive industries, such as Lennox, leader in the home heating and air conditioning field. But, Motorola bonuses do not stop here. Mr. McRae further reports that three radio-equipped trucks now do the work that formerly required five!

Can this kind of savings help you?

Why did Lennox specify Motorola? Three good reasons: 1) No mounting problems; the Dispatcher radio is the smallest mobile industrial radio available; 2) No special generators or batteries, because this radio needs only $\frac{1}{8}$ the current required for other radios, and 3) Motorola's reputation for reliability.

Check for yourself. Talk to the man from Motorola, or write for literature on the Dispatcher radio.





Motorola Communications & Electronics, Inc., 4501 Augusta Boulevard, Chicago 51, Illinois • A Subsidiary of Motorola Inc.

Circle 109 on Reader Service Card

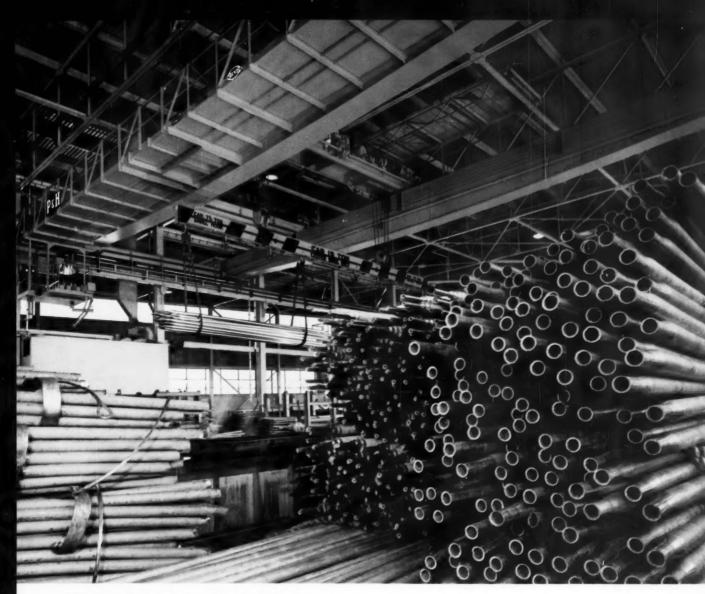


Photo courtesy Bridgeport Brass Co., Bridgeport, Connnecticut

FOR EVERY APPLICATION, THERE'S ONE CRANE OUTSTANDING...

IN PIPE AND TUBE MILLS... Equipped with a double-hook-and-beam lifting arrangement, this P&H overhead crane is one of a number in this plant handling loads of pipe, tubing, and other equipment and material with complete safety. The operator stacks and positions such loads quickly and accurately with no dangerous swaying or twisting.

The installation is typical of the way Harnischfeger job-engineers each crane for a particular application. All factors affecting performance are carefully evaluated and integrated into the overall design. As a result, P&H cranes have established unequalled performance records in every major industry. This is the kind of proven quality that keeps operating costs to a minimum — year after year, decade after decade.

Find out how a P&H job-engineered crane can fit into your materials handling operations. Write today for crane bulletin C-42, Department 125, Harnischfeger Corporation, Milwaukee 46, Wisconsin.

PaH deep carburized gearing as well as bridge and trolley wheels are available as an option where service is particularly severe with frequent impact or shock loads. These two cross-sectional views clearly show how PaH's special heat treatment produces exceptionally hard wearing surfaces combined with a tough ductile core.





Sectional views of deep carburized

HARNISCHFEGER

Milwaukee 46, Wisconsin



Clouds of steam and heat billow up around this P&H Hevi-Lift® hoist every time the paper digester is cleaned of residual material. This paper mill has found that a P&H Balanced Design Hevi-Lift hoist is engineered to take such punishment in stride, without any special care or coddling. Totally enclosed motor and controls simply ignore the "torture-test" atmosphere.

Balanced Design of this Hevi-Lift means that every part has been balanced or matched with every other part for maximum strength, temperature, and performance characteristics. Result? This Balanced Design hoist will stand up longer in heavy duty cycles (and under conditions like this) — with far less maintenance — than any other hoist made today.

For more information, write for bulletin H-55. Department 227, Harnischfeger Corporation, Milwaukee 46, Wisconsin.

PaH

HARNISCHFEGER

Milwaukee 46, Wisconsin

Photo courtesy Cornell Paperboard Products Co. Milwaukee, Wisconsin

Material Handling Engineering

OCTOBER 1960



RAISING THE STATUS
of the material handling
engineer is a vital concern
of Harry Freeman, director of
the MHEDA National Training
Center. Freeman (right)
explains his plan to
Associate Editor Dick Dietz.

BETTER STATUS a new plan

By DICK DIETZ, Associate Editor

Do you EAT AT THE EXECUTIVE table in your plant?

Not a silly question at all. It's vital to your status, that important and most elusive of all work conditions. Status—

You can't hold it in your hand...

You can't eat it..

You may not be able to define it...

But you want it. It's the social handle of your pay cup. It's the real joy of your job. Status partly is the way you see yourself in your job setting. Ask yourself:

Like your work?

Doing what you feel you do best?

Accomplishing something?

Your job rate important with you?

Say yes honestly and your job has status in your eyes.

Status also comes from those around you: your

BETTER STATUS

bosses, men on or near your own level, and workers beneath you. You may be doing a good job, saving thousands of dollars through smart material handling practices. If those around you recognize this and show it, you may feel secure in your status. Fail to get recognition you think is due and your status is challenged. You may even consider yourself a failure.

Symbols: Title and Authority

What's your title? Material handling engineer or something else? Is material handling your entire job or one of several duties?

Your title is a concrete status symbol. Get it recognized by management or suffer the status consequences

Those in status positions must have authority whether they employ it or not. You lose status if you have no real authority. You don't have to crack the whip all the time. But your status depends greatly on having the power to back up your decisions.



"... I've seen material handling engineers do excellent jobs and suddenly find themselves fired. They were not acknowledged as important engineers ..."

A Peek at Your Level

Engineers on your level know fairly well what you're doing. Part of your status to them depends on you as a person and on how competent you are. Another part depends on whether you have authority, whether you have a title to match your job.

Don't Sell Short the Workers

The attitudes of the hourly boys influence your status. They may admire you as a clearheaded genius, twit you as an emptyheaded dreamer, hate you as a threat seeking to replace people with machines.

Their attitudes have subtle ways of becoming known. Your systems will not work if they don't accept them, make them work.

Status to You

Solid status makes you feel vital to the company. You know you're doing a necessary job. You'll feel secure, not like a sixth finger on the hand of production.

"... I've seen MH engineers do outstanding jobs, but the men remained unknown. If they were known, companies would want them, seek them out, use their services ..."



Then you're more likely to be a satisfied employee. Your energy will go into work, not dissipated in form-less hostility or in griping sessions. You'll be more efficient.

What To Do About It

You can work on management to give you a title and to improve your authority. You can try to find ways to make coworkers admire you. You can learn how to deal with those under you in a way that commands their respect. And there's another way.

You can raise the status of material handling engineers as a group. But how? Here's an answer from Harry Freeman, director of the MHEDA National Training Center in Newport, R.I.

The Freeman Plan

He proposes three levels of material handling engineers:

AMHE—Associate Material Handling Engineer FMHE—Fellow of Material Handling Engineering HFMHE—Honorary Fellow of Material Handling Engineering.

Only those passing certain qualifications could use these initials after their names. Only they would be recognized as genuine material handling engineers.

The Heart of the Plan

Freeman says the plan depends on forming an honors board, representative of the entire material handling field. The board will set the standards for material handling engineers and vote (by secret ballot) on candidates.

Freeman suggests that the board be divided onethird from industry, one-third from educators, and one-third from engineers in the field. It should include 21 members, 11 to be a voting quorum. Each will sit for three years, with one-third up for election each year. To get started, there will have to be 1- and 2year terms.

Who will pick the board? Freeman suggests a council representing segments of the entire material handling industry in proportion to numerical membership. This council would include representatives from AMHS, SPHE, MHI, CFTMA, MHEDA, truck associations, crane and hoist group, and others.

Freeman wants the entire plan sponsored by the American Material Handling Society. He says AMHS has a dedicated purpose of improving the status of the material handling engineer.

Some Standards

The honors board first must agree on standards compatible with other industrial groups: surveyors, electrical engineers, highway engineers, industrial engineers, mechanical engineers, and so on.

There must be a substitute for academic background. Freeman suggests that no candidate be considered unless he has been in the material handling field for five years. Or, it could be three years if he has a degree in material handling or an associated degree in reference to a particular industry.

Freeman points out that there is no undergraduate degree in material handling at present. He hopes his plan would encourage colleges to offer one. He suggests a 4-year course, the first two years of which would include humanities, economics, industrial and labor relations, business administration and management, and some form of engineering. The final two years then would concentrate on fields of material handling engineering.

To Become an Associate

Freeman proposes three steps:

• Write a thesis.

Get endorsements from three in the field who consider the candidate worthy.

 Take an oral examination before an examining board, a subcommittee of the honors board.

If successful, the candidate becomes an AMHE. He keeps this title so long as he works at material handling, and for three years after he leaves the field. If he wants to reenter the field after three years, he must reapply and submit a new thesis.



"... On the other hand, I've seen big talkers try to do a job and fail. The company had no way to check their qualifications and lost faith in the field ..."

To Become a Fellow

They must have three years in the field and a master's or doctor's degree. Or else they must have distinguished themselves by developing a new process or new equipment, something that produced an impact in the material handling industry.

The highest degree, honorary fellow, would have the status of honorary doctorate in other fields, Free-

THE ELEMENTS

INDUSTRY COUNCIL—picks the honors board. The council is made up of representatives from all segments of the material handling industry.

HONOR BOARD—sets the standards and selects the members from candidates.

ASSOCIATE MATERIAL HANDLING ENGINEER—proved himself qualified.

FELLOW OF MATERIAL HANDLING ENGINEER-ING-distinguished himself.

HONORARY FELLOW OF MATERIAL HANDLING ENGINEERING—dedicated his life to material handling.

AMERICAN INSTITUTE OF MATERIAL HANDLING—central institution for records and information on the plan and the material handling industry.

man hopes. Honorary fellows would include a select group who dedicated their entire lives to material handling. They could be elected by the honors board, recommended by a university or by a single association or society. Honorary fellows would be automatically rejected if they sought the honor.

Freeman's Analysis

The plan, according to Freeman, will enable a qualified person to be recognized as a material handling engineer through accomplishment, not through influence. Who judges him? His own people, says Freeman, the best group to do it.

Freeman sees his plan helping rid the field of unqualified consultants. A good consultant could become an AMHE without trouble, A spurious one couldn't

He also sees his plan providing a better measure of income for material handling men. An AMHE or fellow will command better pay. And, of course, his status will improve.

A Natural Outgrowth

The plan will develop the need for a central place where records and information are kept, says Freeman. This could be called an American Institute of Material Handling.

It should publish annually a list of recognized material handling engineers. The list, according to Free-

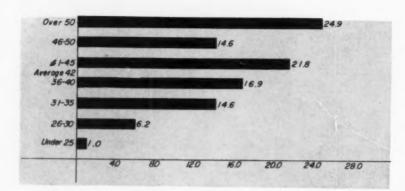
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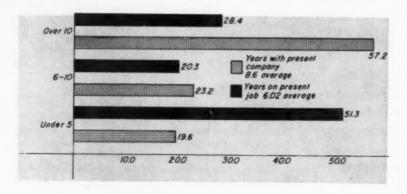
man, could be paid for by annual dues from material handling engineers, although it could be started with grants from various organizations. A warning: Freeman says this institute must be free from any single organization or segment of the industry.

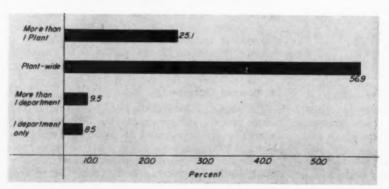
Freeman says his plan, plus the institute, could further the material handling field and raise the status of everyone affiliated. •

Who is Mr. Average in material handling?

How many men in material handling have the status discussed on the preceding pages? To find out, MHE sent questionnaires to a segment of our readers selected at random. Out of the 518 questionnaires returned we have prepared the following profile of the average material handling man.







He's mature.

Our Mr. Average is 42 years old. Not a great age, to be sure, but old enough to be skilled in the techniques he needs for the job. And old enough to have acquired mature judgment.

Maturity is the keynote of the chart showing age groups. Notice how the responsibilities for material handling are not given to many men under 30.

He's steady, not in a rut

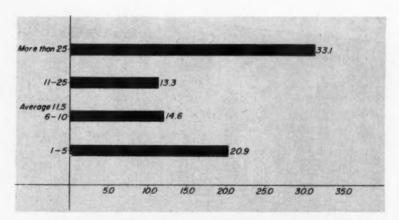
Mr. A. has been with his company 8.6 years and on his present job 6.02 years. That's not the record of a job-hopper—but it also points out that our man doesn't tie himself down to one company when changing jobs will better his career.

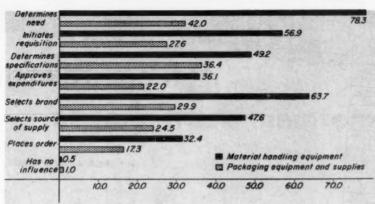
The chart shows that a large number of men have been on their material handling jobs less than 5 years. But they were with the same company much longer. Which leads to the conclusion that they worked up through the ranks to MH responsibilities.

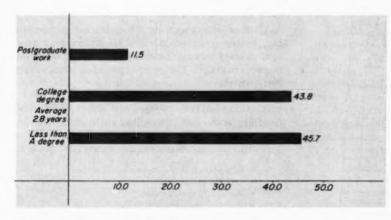
He covers a lot of ground.

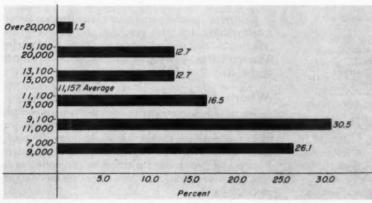
Mr. A. works for a company that has 502.2 employes. His duties in material handling are plant-wide, often cover more than one plant.

Only a small number of MH men are limited to departmental responsibilities, according to the chart. Note the fairly substantial percentage of men who cover more than one plant.









He's a supervisor.

Mr. Average has 11.5 people reporting to him. This indicates that he has more responsibility than MH men have had in the past. These supervisory duties have come to him through the gradual expansion of his job.

Chart shows that only a small percentage of MH men do not supervise others. Note the large percentage of those who supervise more than 25 people.

He buys equipment.

Mr. Average is a powerful factor in his company's decisions to buy handling and packaging equipment. He determines the company's needs for new MH equipment in the plant, in the yard, and in the warehouse.

The material handling man's influence is felt in all the operations pertaining to equipment purchases. Since he deals with many functions, the figures on the chart will not total 100 percent.

He has some college training.

Mr. A went to college for 2.8 years. Most of his studies were in mechanical engineering. He attends some material handling extension courses at local colleges, is more likely to take advantage of courses if they are sponsored by AMHS or SPHE.

Chart shows how many years of college education were reported by the 74.1 percent of respondents who showed more than high school backgrounds.

He is well paid.

Mr. Average, age 42, earns \$11,157 a year. This compares favorably with other engineers in his company who have a similar range of responsibilities. But if the MH man could improve his status, his salary would also rise.

Salaries for material handling work have a tremendous range. Lower salary brackets of beginners in the field are balanced by higher brackets of executives who have handling responsibilities. •

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CHECKOFF FORM keeps writing to a minimum, gets the job done well. Driver checks each item as OK or REP (repair needed). Both sides of this form are the same. Therefore, two drivers from two different shifts check the same vehicle, provide the supervisor with a comparison.

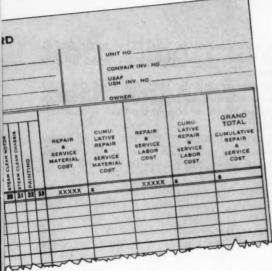
Take the

- Inspection and maintenance procedures.
- · Reliable performance records.
- Preventive maintenance.
- Trained repairmen and drivers.
- · A watchful eye on truck use.

A material handling equipment maintenance department should run the program. It doesn't matter whether the department falls under Plant Engineering, Transportation, or whether it's a separate department under Industrial Engineering.

Where to Start

Set up an inspection and maintenance procedure. Make sure your workers know the maintenance procedure and follow it. Ask for advice from the equipment seller. Not only can he help with procedures but he can give full instructions in preventive maintenance. Also, have him help you set up an adequate stock of parts.



YOU NEED a complete history of a truck before you intelligently can decide when to overhaul, alter, or replace it. This form tells the cumulative cost of repair and service, plus a listing of all major and minor repairs. Under the Convair system, four other forms contribute to the completeness of this one. They include a driver's check list, a service requirement, an inspection and lubrication checkoff, and garage work authorization. Purpose of the forms is to put vehicle maintenance and replacement on a sound cost basis.

guesswork out of fork truck maintenance

tterial Handling Engineer, Convair, a Division of General Dynamics

Some preliminary steps before setting up procedures: Before buying a truck, decide how it will be used, exactly what you want it to do, the amount of maintenance you can reasonably expect to give it, and how much this maintenance will cost.

Records, Heart of the System

Find out how much useful work your industrial trucks do each shift. You can do this with performance-measuring devices, preferably truck-mounted disc recorders. They tell you engine idle time as well as working time.

Make up simple report forms. We prefer the checkoff type because they're quickest to fill out and often the most thorough. We use five forms.

Form 1—Driver's check list covers 23 trouble spots, from chassis damage to fire extinguishers. The driver goes down the list, checking each either as OK or as REP (repair needed). This list appears on both sides of a card, enabling two drivers from different shifts to check the same vehicle, providing a comparison. Although the drivers check an item for repair, it's still up to the supervisor to decide whether the truck stays on the job or goes to the garage.

Form 2—Mobile equipment service requirement is a form to order the truck into the garage for maintenance. It tells what they're going to do so the plant pool has an idea when the truck will be returned. Meanwhile, the driver uses a replacement truck from the pool.

Form 3—Inspection and lubrication checkoff sheet includes checks for three inspections, done regularly after 100, 600, and 1,000 hours (or 2,000, 6,000, and 10,000 miles).

Form 4—Garage work authorization is made up from Form 3, the inspection and lubrication checkoff sheet. It's like a regular garage bill. It lists 32 repairs, from tires to fuel pump. It also lists these causes of damage (one to be circled by the garage):

- Faulty design.
- Faulty construction.
- · Operation beyond limits.
- Operator abuse.
- · Normal wear.
- Vandalism.
- · Poor lubrication.
- Inferior maintenance.

Perhaps most important, this form includes the cost of servicing or repair.

Form 5—Historical cost record, most significant form, is a complete history of the truck. It lists cumulative costs of repair and service. This is vital when considering replacement.

Schedule Preventive Maintenance

Most large plants do; small plants are more likely to neglect it. You need a definite program and a rigid schedule. It takes clear planning to pull trucks from production without disturbing the flow. Don't let production pressure interfere with the maintenance schedule. Make sure you have authority to enforce the preventive maintenance program. Have standby trucks to replace those in repair or inspection.

Train Repairmen and Drivers

Hire first-rate mechanics. It pays in the long run. Get help from truck makers in training your men. Make sure your men have proper tools, a full line of spare parts, and quality lubricants.

Train your drivers to sense signs of trouble in their trucks, such as loss of speed, lack of power, lack of lubrication, worn or damaged tires, faulty brakes, poor steering, and missing parts.

The driver should be mature with a good record. Have him examined by a doctor for general health and good vision. Train him for his particular truck, Set



REVIEWING TEAM holds life and death power over equipment. The team includes (I to r) R. L. Howard, maintenance foreman; B. R. Hissaw, transportation operations chief; G. E. Baumgartner, facilities control engineer; B. J. Handwerker, the author, and R. M. Montgomery, in-plant transportation foreman.

up an obstacle course for handling loaded pallets under all conditions. Instruct the driver in safe loading, the meaning of load center, proper driving speeds, and all plant safety regulations.

Keep Your Eyes Open

Work with the garage to find out what causes breakdowns. Are they from neglect of minor repairs, careless inspections, faulty lubrication, overloading, hot rodding, bad floors, careless operation? Particularly watch equipment over five years old.

When We Replace

We replace a truck when the average annual cost, including maintenance, repair, and 1-shift fuel consumption, exceeds one-third the cost of new equipment. The 1-shift fuel consumption record is kept separately on each truck.

Example. In our reclamation yard we replaced several lift trucks with squeeze rotating attachments after only two years. They failed economically when we applied the formula.

Example. A \$6,000 lift truck may cost \$1,800 to repair and maintain each year. Its 1-shift fuel con-

sumption may amount to \$500. This totals \$2,300, more than one-third the replacement cost. We buy a new truck.

We rely on our records. They tell when the truck should be overhauled or replaced, regardless of age or book value. When we bought the truck is relatively unimportant.

Trucks wear out to the point where they no longer are economical to operate and need to be replaced. There are also many other reasons for replacing equipment.

New design. New equipment—power steering, fluid coupling, telescoping masts, easier maintenance—often makes old trucks obsolete. Also, new straddle trucks, sideloaders, narrow aisle trucks, electronically-guided tow tractors, elaborate conveyor systems may make replacement worthwhile as soon as they appear on the market.

Changing methods. A new manufacturing plan or a change in product may make your material handling equipment obsolete. And a well-managed material handling department always looks for better ways.

Plant changes. New layouts often lead to replacement handling equipment. Also, new methods of unit loading and higher storage may mean new high stacking equipment.

Labor savings: Sometimes you can save enough by replacing manual labor with machines to pay for it the first year. You also may head off grievances and fatigue.

Cost reduction. Handling costs one-third of your production dollar. You cannot afford to let it go higher by delaying replacement of obsolete equipment.

Quality pays. Better equipment may reduce damage. Our Fort Worth division saved more than \$100.000 in one year with a new way to store and handle sheet stock

Less hazard. Old, inadequate equipment leads to accidents. Replacement equipment may be safer.

Our Replacement Method

We use no complicated formulas for replacement. Instead, we keep accurate records which tell us what it costs to operate each piece.

Each July, a team carefully reviews equipment operating costs. This team includes the chief of Transportation, foremen of Maintenance, Garage, and In-Plant Transportation, the Facilities Control engineer, and the Division Material Handling engineer. They decide what replacement equipment will be included in the annual capital budget.

But, before considering replacement, the committee figures on whether to make a major overhaul, whether to alter or modernize a current piece. The choice is made from information supplied from vehicle records.

Between July reviews, maintenance supervisors constantly scan repair and cost records to decide whether to retire an item or to put more money into it. We overhaul no piece of equipment more than five years old until we figure how much a replacement will cost. •

Recording truck performance

HANDLING WITH MOBILE EQUIPMENT needs double-barreled checking. You have to check the equipment (see Take the Guesswork out of Truck Maintenance, pg. 62) and you have to check the driver. Either or both might be operating at less than top efficiency.

Installing performance recorders on vehicles is one way to find out many things you need to know about their operation in the plant or on the highway. Recorders will tell you:

When the vehicle is in motion.

When it stopped, for how long, and when it started again.

How far and how fast it traveled.

How long the engine has been running. Number of lifts made by a fork truck.

How much impact the vehicle and its load has received.

Motion Recorders

Motion recorders are made to show any one of the first five factors listed above or a combination. You can install them on industrial trucks or highway vehicles. Some instruments use removable charts to mark down the data, others have built-in number indicators. Charts are made so that markings cannot be changed or forged. The instruments have safeguards so that the recording mechanism cannot be tampered with.

Some motion recorders use a mechanical arrangement sensitive to the vibrations of the truck as it moves. Others which include a record of speed and mileage are electrical, operating off a speedometer. Distance can also be recorded mechanically.

You can get an indication of every lift your fork truck makes as part of your performance record. You adjust them to a predetermined load so that empty lifts are not recorded.

An aid to maintenance scheduling is the hour meter for engines. It records the total number of hours the engine has been running, whether the truck has been moving or not.

Recording Shock

Impact recorders tell you when your product is being exposed to shock, and how severe. They tell from which direction the shock is coming and the exact time it happens. You can install them on a truck to see how much impact it's getting over a route. Or you can put them on your packages to find out where in the handling cycle the product is receiving impact.

Why Record?

Most recording equipment is easy to install and maintain. Chart interpretation is simple. But benefits can be big in many ways:

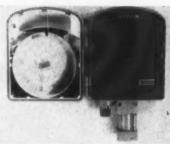
1. Planning. You'll know how many productive truck hours you're using in every department. You can balance out an inequality you might find by redistributing the truck fleet. Or you might find that better



FNGLER INSTRUMENT CO



SERVICE RECORDER CO.



INSTITUTE OF MODERN MANAGEMENT



THE IMPACT-O-GRAPH CORP.



ARGO INSTRUMENT CORP.



JOHN W. HOBBS CORP

drivers are being called on to handle more loads than less skilled drivers. This information would be of value in setting up a driver training program.

2. Routing. Recording mileage of highway deliveries can help you evaluate routes.

3. Measuring work. Knowing how many payload lifts a truck makes during its recorded operating time helps you set up handling standards.

4. Supervising. Recorders make it easy to spot the incompetent drivers in the plant and on the highway. Speed recorders on highway trucks keep your drivers from trying to make up time by speeding after extralong layovers.

5. Stopping damage. By measuring the impact your product is receiving, you can determine what part of the handling process is at fault. This will indicate whether you should change your packaging, improve handling procedures, or try another method of shipping.

CONTAINERIZATION -

PART 2

Last month we explained what containerization is, why it saves you money, and what the American Standards Association is doing to speed progress. Here, in the concluding article, you will read the actual standards proposed to date by ASA, and what America's rail, truck, air, and steamship lines are doing to speed containerization service to their customers.

In picking standard container sizes, American Standard Association's MH5 Committee must consider the dimensions of truck trailers, railroad cars, ships' holds, and cargo airplanes. Big containers must be sized so they will use the most space on the most carriers—a tough job because there are really few standard sizes for vehicles. Small containers must then be sized so they can be stacked in modules, like building blocks, and add up to the dimensions of the larger ones.

ASA divided the containers into three broad groups, and put a subcommittee of the MH5 Committee to work on each. They are: van containers (like demountable truck bodies), cargo containers (somewhat smaller, up to 8' x 8' x 8'), and pallet containers (the smallest—several might fit into one van container, cargo container, truck trailer, or boxcar).

The van container subcommittee recently recommended making the big containers 8' wide by 8' high, and 10', 20', 30', or 40' long. They have circulated their report throughout industry, and have invited all interested manufacturers, carriers, trade associations, etc. to vote on it. Once these dimensions are ratified, ASA will adopt them as official standards.

Cargo container subcommittee recommendations stick to the same width and height of the van containers—8 x 8'. They will be shorter, however, to allow for smaller loads than could fill the big van containers. And, for specialized uses, the subcommittee is considering recommending heights other than 8'.



BUNYAN BOX is American Airlines air cargo container. AA has converted 15 DC-7's to cargo, is working toward low-cost jet cargo service. Like other airlines, AA knows planes lose money while on ground, looks to containerization for answer to quick, profitable loading and unloading.

Pallet container sizes are a little more complicated. Basic sizes tentatively recommended by the MH5 subcommittee are 44" width and 54" length, with modular sizes of 44" x 36" and 36" x 29". Thus two 44" x 54" pallet containers end to end would take up the same space as three 36" x 44" side by side. In a like manner, all of the modular dimensions add up to multiples of the basic 44" x 54".

Where does it stand?



GRACE LINE'S SANTA ELIANA was U.S.'s first all-container ship. She carries 476 of Grace's Seatainers between Port Newark and Venezuela. Her trim silhouette shows impact of containerization. There are no cargo booms, but bridge cranes fore and aft hoist containers on and off.

Recommended heights are 27", 40", 60", and 80". The subcommittee felt this variety of heights was necessary so users could assemble loads in weights they could handle, regardless of the density of the material.

For larger pallet containers the subcommittee recommends a jumbo size (88" x 54") and a master size (108" x 88"). Again, these are multiples, or modules,

of the basic 54" x 44" pallet containers. Heights are the same: 27", 40", 60", or 80".

What About Handling Hardware?

One of the things overlooked in most discussions and planning to date is the hardware for the containers. So far, most standardization effort has been for container sizes. Precious little has been done about standardizing on handling methods, tiedown methods, and the hardware these various methods will need. Until this is ironed out too, there can be no real interchange between carriers.

Private Systems vs Common Carriers

Despite the advantages to shippers (lower freight rates, less in-transit damage, less pilferage, lower insurance rates, and lower packaging costs), containerization benefits the common carriers most, unless you own your own carriers. If your company has its own trucks, rail cars, or ships, you get the carrier's savings too. But even if you don't have your own vehicles, there has been enough containerization progress by common carriers to make it worth looking into.

Progress by Steamship Lines

So far steamship lines have made the most progress in containerization. Many of them are using the huge van containers and saving impressively in cargo handling.

Grace Line, for example, will soon complete conversion of several C2 freighters to containerships, at cost of about \$3½ million each. The first of these, the Santa Eliana and the Santa Leonor, are now in service. Each holds 476 containers. The containers are 8' x 8' x 17 feet, built by Highway Trailer Co. They're made of aluminum and high tensile steel, lined with plywood and floored with oak. Empty, they weigh 4,243 lb. Loaded to capacity (902 cu ft), they weigh up to 18 tons depending on the density of the cargo. They fit two to a flatbed truck, three to a rail flatcar. The Santa Eliana and Santa Leonor have their own bridge cranes for loading the containers from hold to dock. Cranes and containers are rigged with National Malleable & Steel Castings Co.'s Speedloader for handling and tiedown. The containers can also be handled by lift truck. Shippers may, if they like, book with Grace to have empty containers delivered to their plant or warehouse, then picked up for delivery to dock when

Matson Navigation Co. offers a similar service. Its first containership, Hawaiian Citizen, went into service





NEW YORK CENTRAL'S FLEXI-VANS are demountable truck bodies that are equally at home on trucks or railroad flat car. Available now for NYC shippers, they need no handling equipment. Driver backs onto train as rear wheels telescope forward (top)...

... until trailer engages holding mechanism built into flat car. Then he swings container 90° (bottom) to lockdown position. Precision system makes it easy for one man to pivot even loaded containers. At other end of trip an empty truck chassis takes container off.

recently. Details are similar to Grace Line. Containers are 8' wide, 8%' high, 24' long.

Many other marine carriers, like Erie & St. Lawrence and Pan-Atlantic (now Sea-Land Service) are initiating containerization services. Others are studying them; more are bound to come.

Progress by Railroads

Though not as quick to jump into containerization as the steamship lines, railroads are making big moves too. Most rail lines now offer piggyback service. (Indeed, piggyback's success has been one of the things slowing down containerization.) But forward looking lines like New York Central, Missouri Pacific, and many others, are taking that one step beyond piggyback to pure containerization.

NYC, for example, has been running its Flexi-Van service for over two years. Flexi-Van is a unique containerization service; it needs no handling equipment. By a push-pull-click-click system, the container (a demountable truck body) slides off the truck chassis and locks in place on the flatcar simply by the force of the truck backing up against the flat car. Flexi-Van containers come in various sizes and styles. Most of

them are closed containers, $8' \times 8' \times 36'$ or $8' \times 8' \times 40'$. They hold up to 2,440 cu ft, 42,000 lb. They come with rear door, single or double side door, open top, etc. Specials are also available, such as reefers, tank cars, automobile racks.

Progress by Airlines

Biggest hinderance to containerization by airlines is the airplane. Few of them can load or unload the big containers. In most cases it takes a tail-loading aircraft. There are such planes today, but most of them are prop-driven. The big future lies in jets. Containerized jet cargo service will be a reality soon. The containers are already available. The Air Force is already using a few swing-tail Boeing 707's and Douglas DC-8's. Other aircraft are on the drawing boards.

Progress by Truckers

Most of the big truck lines have studied containerization, but not many have made it work for them yet. Many take the attitude that containerization merely makes them slaves to the rail and ship lines. The main trouble is that by far the majority of all



TYPICAL JET BAGGAGE SYSTEM takes advantage of containerization principle. Boeing 707's and 720's each have 5 baggage pods, shaped to fit into forward cargo compartment. They're rolled out to airstrip on special dollies for positioning under plane (left) . . .



... then nestled into belly on hoisting gear (right) that attaches to the plane. Pods are fiberglass, 8'x3'x3'. Each one holds up to 35 bags or 1400 lb, the equivalent of 2 station wagons or a DC-3. They're used for freight too. Other jets have similar systems.

truck shipments are LTL (less-than-truckload). But, point out proponents of truck containerization, while most truck shipments are LTL, the lion's share by weight is in full truckloads. Even so, containerization as railroads and steamship lines know it, with the large van-type containers, offers few advantages to truckers. While there are many advantages for the shipper, they have not been important enough to most truckers to make them go into it seriously.

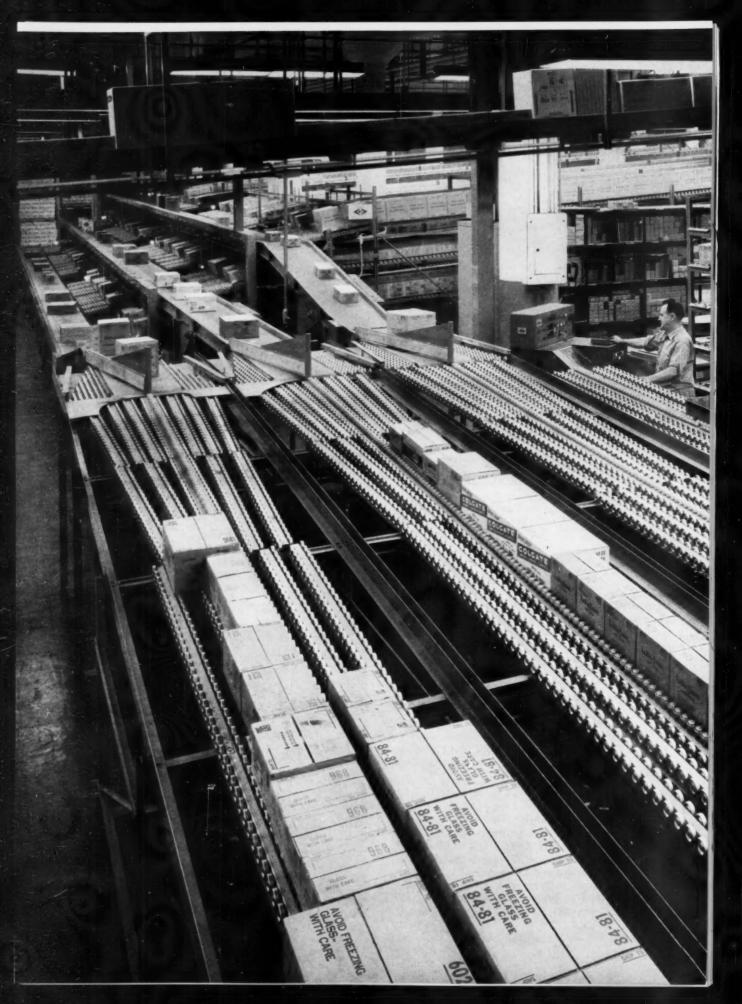
What truckers need is a system of smaller containers that would allow them to serve shippers without depending on other carriers. Many truckers are working on such systems. Look for significant progress soon.

Summing Up

Few ideas have rocked distribution like containerization has. It's far from fully developed, but when perfected it will benefit shipper and carrier alike. Right now the benefits plainly go to the carriers—mostly the steamships and railroads—unless you own your own system. All experts agree: this is the shipping method of the future. And for many, it's already here. ◆



TRUCKERS SEE BENEFITS of containerization too, though not many are doing anything yet. Norwalk Truck Lines uses pallet containers to unitize small shipments. They have metal post corners and nylon web sides to contain loads securely.





The most modern warehouse order-picking system in the world

designed and built for the Colgate-Palmolive Company by



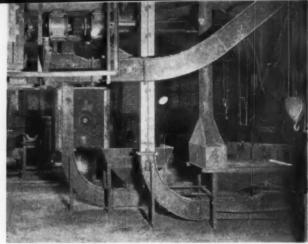
A-F Conveyors

The Alvey-Ferguson Company, Dept. WD-10, Cincinnati 9, Ohio



Booklet explains complete operation of system, tells how it fills an order a minute by punched card control. Includes illustrations and diagrams. Write loday for your copy.

Circle 5 on Reader Service Card



JEFFREY MEG. CO.

EN MASSE CONVEYORS move fine powders and granular material in any direction. They're totally enclosed, make no dust, take little room. Paddles or flights on an endless chain push the material through duct.

Move bulk materials mechanically

By JOHN FISCHER, Chief Engineer, Materials Handling Division, Sprout, Waldron & Co., Inc.

MAYBE IT'S FLOUR OR GRAIN, perhaps coffee beans. Maybe scrap metal, ore, heavy lumpy stuff. A mechanical bulk conveyor can move it. They're good for long continuous hauls and big capacities, or short, intermittent, light moves.

En Masse or Continuous Flow Conveyors

Carbon black, flour, plastics, other powders or grains move safer and cleaner by en masse conveyor than by any other. They're totally enclosed, naturally dustless.

Material completely fills a duct. Pusher blades (called flights) on an endless chain move the material through the duct. You can combine vertical, horizontal, and inclined runs. You can handle any pulverized or granular substance, unless it's unusually abrasive, extremely fragile, or has oversize lumps.

This conveyor self-loads to capacity, won't overload, needs no feeder. It's self-cleaning within reasonable limits. Stop the feed and let it run until it clears.

You may have a succession of feed-in openings. Material fed to the first opening fills the duct, prevents others from feeding. This works for the discharge openings, too. The first is supplied until it fills. Then the load carries to the next chute.

En masse conveyors require more power than bucket elevators, take only a fifth the area for the same capacity. They can't handle surges. They retain less residue in the duct than do screw or bucket conveyors. Use them near rated capacity; they tend to



JEFFREY MFG. CO.

ON A HILLSIDE, IN A MINE; filled bags or loose ore; dependable trough belt conveyors move bulk materials with safety and economy, They'll carry heavy, bulky loads long distances day in and day out.



slip under light loading. Use caution when conveying sticky materials, they tend to compact.

Trough Belt Conveyors

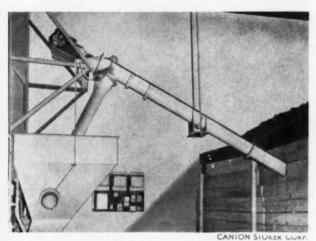
Large lumps, fine powders—separate or mingled, extremely fragile material: trough belts will convey them over long distances or short. People move mountains on belt conveyors.

The belt is endless, runs in a straight line, powered by a drive pulley. It runs over idlers, consisting of two or more pulleys, arranged to turn up the edges of the belt to form it into a moving trough. Friction between idlers and belt is small; power needs are modest even for considerable runs. Loads ride on the top run of the belt. Path may be horizontal, moderately inclined (to 25°, depending on conveyed material), or some of both.

Material may be carried in an inert atmosphere. Simply enclose the conveyor with a tight cover. You can heat or cool while conveying if you control the They can be feeders. They also can hold materials during a reaction. Put a water or steam jacket around the trough, or use a hollow screw shaft and flights—you'll get good heat transfer. Do a certain amount of mixing and blending while conveying. Just put paddles on the conveyor shaft—or use ribbon flights instead of solid ones. (These resemble lawnmower reels.) Split casings, hinge them; they'll open fast.

Screw conveyors can have any number of inlets and outlets. They can be gastight to carry materials in inert atmospheres. Sometimes, they'll serve as gas locks to prevent the escape of vapors.

Often these applications call for special design and construction. It may be worth the added cost. A drawback used to be the short life of hanger bearings, which are exposed to the material being moved. New developments make bearings last much longer. Vertical screws to 30 ft without intermediate hangers have been successful. Water-cooled bearings allow handling at elevator temps. Screws coated with the new



SCREW CONVEYORS are rugged, withstand abrasion, may be dust-tight and quick-cleaning. This one feeds lump coal to furnace hopper from bin, crushes lumps instead of jamming. The thrust bearing (mounted at top, or delivery, end) is never submerged in material.



BUCKET CONVEYOR lifts grain vertically, feeds it to a screw conveyor atop a commercial elevator. Screw distributes grain to storage bins below. Bucket conveyors handle loose material from powders to lumps.

atmosphere temperature. There are belts compatible with nearly any material.

You may use a number of feed points. Bear in mind, though, that this might lead to overloading. You must use metering devices with multiple inlets. These devices also will enable you to proportion ingredients as they flow on a belt.

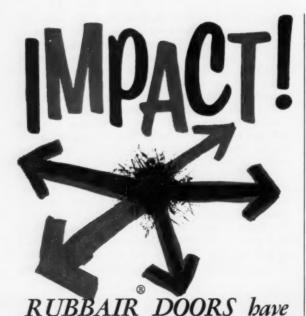
The material level seldom rises above the sides of the trough. There's small chance for buildup or abrasion between belt, idlers, and pulleys if the belt is properly cleaned. You can get brushes, scrapers, vibrators, other cleaning arrangements.

Screw Or Spiral Conveyors

Cornstarch or pebbles; slurries, coal, sticky substances—screw conveyors will move them up, down, on inclines. A screw, turning in a trough or tube, moves materials along its length. They're compact, fit easily into tight places. plastics and fused ceramics show promise of resisting corrosion, need less power.

Apron Conveyors

Widely used for handling loose, bulky or hot materials, small parts over horizontal or inclined runs. They'll move sand, scrap metal (like turnings or pressroom trimmings), forgings, and castings. Apron conveyors have steel roller chains running in fixed parallel tracks. Interlocking steel pans are bolted between the chains. The pans have beaded edges, front and rear, overlapped to form a continuous surface. The overlap is maintained as the conveyor passes over the head and tail sprockets. Material is prevented from leaking or jamming in the spaces between the pans. Cleats are sometimes used in the pans to stop material from rolling backwards. Flat pans work on inclines up to 22½°; over that deep pans or cleats are necessary.



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MOVE BULK

Piano hinge conveyors are apron conveyors with sealed piano hinges on the pans. They're especially useful with sharp-edged abrasives like press scrap, turnings, etc., which would ruin a belt conveyor. These conveyors often operate in a pit under metal cutting machines and quench tanks.

Bucket Elevators

They handle practically any loose material from very fine to large lumps. Used for inclines and vertical lifts. Buckets are mounted on endless chain, belts, or the like. They either scoop material from the boot, or they're fed from a chute. They discharge when they go over the head wheel.

Centrifugal discharge elevators are common. The buckets move at fairly high speed, flip out their con-



APRON CONVEYORS handle tough jobs that will wreck other conveyors. Interlocking steel pans move castings, scrap metal, hot materials; often work in a pit. Material won't leak or jam between the pans of an apron conveyor.

tents by centrifugal force as they pass over the head wheel. The speed of the buckets creates an updraft that picks up light materials.

Continuous elevators have buckets mounted so closely they almost touch. They have more pockets per foot than other sorts. The buckets load after they're lined up for the ascent; there's less shock at pickup and delivery. Slow speed means less wear on parts.

Perfect discharge conveyors, usually chain mounted, are slow machines for sluggish, slow moving materials. Snubbers completely invert the buckets over the discharge chute. There are other kinds of bucket elevators; variations are limited only by the ingenuity of the designer and the user.

Bucket elevators aren't self-cleaning. Fluffy or sticky material may adhere to buckets, even the casing. There's always some residue left in the boot. Use a floating boot or tail section to minimize the residue. A sliding joint attaches the floating section to the casing, keeps feed to buckets constant. •



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Three good examples demonstrate Barrett's engineered problem-solving ability. One is the operatorless Barrett Guide-O-Matic—an exclusive Barrett engineering development. Here's material handling at low cost, electronically—no waste motion or time loss.

Barrett also offers a complete line of hand trucks—with many exclusive engineering features. A third example is the Barrett electric Palletier—again engineered to the job.

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Check-Chart Helps to Make Selection — Use this check-chart as a guide to the selection of the correct equipment to handle your products:

- ★ Type of equipment available
- * Loads vs. capacity
- ★ Speeds vs. distance traveled
- ★ Safety features
- * Over-all length
- ★ Over-all width
- ★ Wheel size and truck height
- * Aisle clearance
- ★ Ruggedness of construction
- ★ Ease of maintenance

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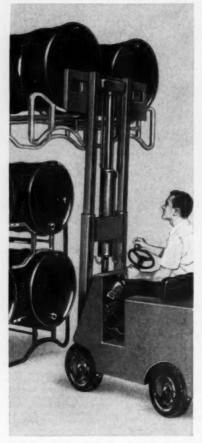


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STANDARD REPUBLIC MATERIALS HANDLING PRODUCTS SIMPLIFY CONTAINERIZATION



REPUBLIC WEDGE-LOCK® PARTS STORAGE UNITS are easy to load or unload from either side. And, the heavier the load, the tighter the grip, because patented Wedge-Lock construction includes a post that will not buckle; a concealed sway-proof joint, and a reinforced shelf that does not sag. Unlimited shelf arrangements. Capable of exceptionally high stacking. Republic Storage Engineering specialists will help you plan.



NEW REPUBLIC DRUM RACKS assure stacking of more in-use drums in less space and at lower cost than ever before. Each rack supports two loaded 55-gallon drums. Racks with drums can be stacked to any practical height. Standard fork-lift trucks can pick, move, and stack as many tiers of drums at one time as capacity permits. Shipped knocked down, with fasteners for quick and easy assembly.

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Moving raw materials through production lines to shipping is faster, easier, more economical, with standard Republic Materials Handling Units... key to containerization.

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cial materials handling problems can be solved from Republic's full line of standard units, at big savings for you.

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CLEVELAND 1, OHIO

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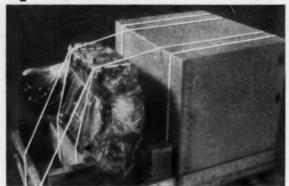
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More safety for your customers. AVISTRAP-strapped packages aren't dangerous to open. AVISTRAP won't whip when it's cut. In addition, waste AVISTRAP is compact, easily burned or otherwise disposed of.

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FRANK C. WIER presents

Attitudes to make a material handling program work

As told to W. B. McCLELLAND, Editor

MUCH HAS BEEN WRITTEN about the equipment needed to properly move materials. Obviously, a good material handling program needs the right equipment and enough of it. But, the right tools are not enough to make a plan work. What about attitudes and procedures?

MATERIAL HANDLING ENGINEERING editor W. B. Mc-Clelland recently interviewed Mr. Wier to get you information on what besides equipment makes a material handling plan work in a manufacturing plant.

The man responsible for movement and storage needs title, authority and responsibility

I was never able to function properly until I was given a title called "Superintendent of Material Handling." After that I worked on the same line of authority with Superintendent of Melting, Superintendent of Rolling and the like. You have to have a title to be recognized.

Handling is the business of the material handling department and we look upon the production people as our customers. Production people do not move and store materials. They concentrate on their main interest which is to make things.

Material handling must have a reason for being and our reason for being is to serve those who form the material.

Movement must be readily available to everyone just like water and electricity

When a plant is built, someone always makes sure of an adequate supply of common services such as electricity, water, etc. It is also basic to provide the means to move goods to and from various departments in the course of regular work. Movement has to be as easy to get as water from the spigot or electricity at the switch. People will not hoard movement if they know they can get it when they need it. You have to convince operating people that they will get what they ask for in time to meet their needs. Early in the game we buried a few departments with material before they were convinced that they need to ask for only what is immediately necessary.

Worry about out-the-door costs, not handling costs only

Production cannot be slowed down to lessen handling costs. The only cost that counts is the cost of finished goods at the shipping room door. Only after

Frank C. Wier recently retired as Superintendent of Material Handling for the Steel and Tube Division of Timken Roller Bearing Company. During his thirty-one years at the Timken Company he pioneered many ideas concerning movement and storage of materials. He was president of the Cleveland Chapter as well as National Treasurer of the American Material Handling Society. He is a regular member of the Material Handling Training Conference staff and has been speaker at many association meetings throughout the country.



9 ATTITUDES

I was convinced that production was completely and adequately served to minimize overall cost of finished goods, would I take time to wring pennies from the cost of handling.

The department needing material is the only one that needs to know exactly where it is

In the main, material coming from a certain mill is sent to a given storage yard. The truck operator is

told what storage yard to deliver to when he picks up the first load in any order. The driver reports the location of the order, by means of a used mill order form for the material concerned, to the department which at some future time needs this material to carry on additional manufacturing work.

The production scheduling department knows how much material is in process. They might know roughly the location of a given order but they do not know exactly. Only the man who needs it next knows and needs to know where it is.

When the next department wants any material, they telephone the radio dispatcher and say "move from position x to position y." The dispatcher orders the movement without knowing what material is in the location designated.

Don't move materials from one operation to another; always store between operations

We never move from operation A to operation B directly. Seldom does B want material at the exact time that A wants to get rid of it. We always take it to a storage yard. Then we tell B its exact location. The material is delivered to B when he asks for it.

Allow anyone to request movement; permit only the dispatcher to order movement

The people who want to get rid of material ask to have it taken to the storage yard. The people who need material ask to have it brought from the storage yard. These requests go to the radio dispatcher, who instructs the operators. Operators do not respond to requests from anyone except the dispatcher, not even

MATERIALS SUPERVISORS are equipped with walkie-talkie sets and can phone instructions to the dispatcher.





NEW MHS POWER AND FREE CONVEYOR IS SIMPLER, STRONGER, MORE VERSATILE

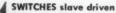
... and costs less to install and operate

The new MHS Power and Free is redesigned throughout. Its low cost, simplified construction and more efficient operation make it economically practical in hun-dreds of plants where this convey-

or type formerly was impractical. New MHS Power and Free Conveyor is lower in first cost, lower in erection costs, and lower in maintenance costs, too.

UNITIZED for simple assembly

New MHS Power and Free is almost a shelf item! Here are standard shipping bundles of I-beam and free track sections—enough for more than 600 feet of Power and Free Lines. Bolted splice plates replace much field welding, make erection easy. Parts are standardized and interchangeable.



Switches, shipped as units, are slave driven and cannot get out of synchronization. For reduced maintenance, switches. feeders, safety devices, inter-locks and similar controls are mechanical, rather than electrical or air operated.

LIGHTWEIGHT strength

Weight is at a minimum, with-out sacrifice of strength. Load carrying trolleys run on two roll-formed C-sections, back to back. Yokes are formed steel, and are bolted to I-beam by means of pre-positioned studs. Longer unsupported spans are possible.



LET NEW MHS POWER AND FREE CONVEYORS IMPROVE YOUR **OPERATION, REDUCE YOUR COSTS!**



Send for Bulletin PF-3 today

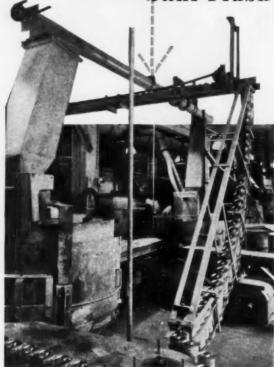


MECHANICAL HANDLING SYSTEMS INC.

Manufacturing Engineers 4620 NANCY AVENUE, DETROIT 12, MICHIGAN Branch Offices and Plants in Principal Cities

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SCREW CONVEYOR SAVES 88% ON CAPITAL INVESTMENT

Boyle-Midway, Inc. uses Flo-tube to move sodium bisulfate at will to an additional packaging machine for filling new 35 oz. economy-size Sani-Flush at an 88% saving in capital investment for proportioning and blending equipment.

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They save time . . . up to 95% on general applications. They save space. Power source is optional. Flo-tubes exclusive Synchrogear-drive motor is 98% efficient.



CORPORATION

108 Andrew Place, S.W., Canton 1, Ohio Circle 35 on Reader Service Card

9 ATTITUDES

foremen. There would be a lot of confusion if they would take orders from anyone else.

It doesn't matter to us who orders materials to be moved. Since only the department which next needs the material know where that material is located, why bother about who the person was who did the calling? The dispatcher never even asked. If movement was wrong, no damage had been done to the material. We lost only movement.

Do the engineering as much as possible by getting everyone in the act

When we need formal engineering we ask the engineering department. Our system is mainly common sense. The results are better when many minds cooperate instead of just a few. In a yard such as ours, more can be done by trial and error than by formal engineering. The persons responsible for getting the work done offer better ideas than the engineering department. It is merely good sense to suggest that if formal engineering is not needed, it should not be used.

Distance moved does not measure handling efficiency

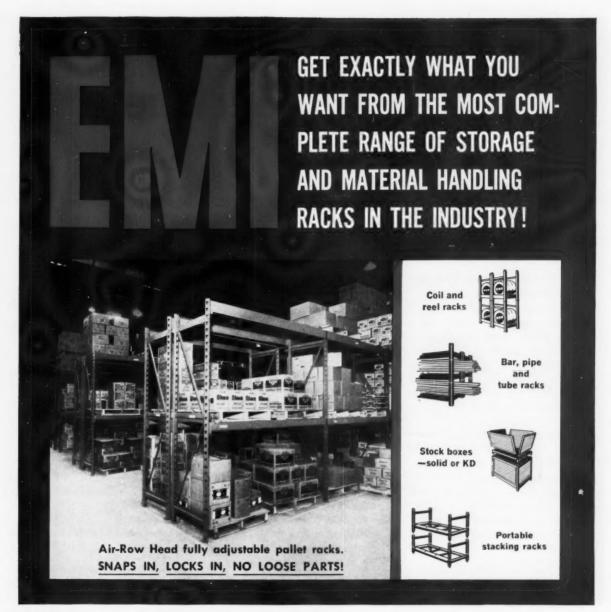
The distance which you can afford to travel depends upon how badly production hurts. If production is congested we might haul materials ten miles. You haul it just far enough to give comfort to operating people. We serve our customers, namely the operating people, and we don't question the size of the load or the distance that it has to be transported.

Success carries with it the privilege of failure

Suppose you do make an occasional mistake. If you made a mistake in movement, all that is lost is moving the materials back again. It is not scrapped. All restrictions which hampered free movement are avoided.

Work in an atmosphere where you are not afraid to innovate. Enjoy the privilege of failure. Without the feeling of security we would never try new things. This atmosphere is created by company policy. ◆

Next month MHE's editor Mac McClelland will break the behind-the-scenes story of one of material handling's most startling new topics—underground warehousing. Mac will tell you why Standard Oil of Ohio made a study of underground warehousing and how their engineers discovered some surprising economies. Learn how nature becomes an ally of the material handling man in this unusual MHE feature coming up in November.





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Just what do you get from Yale PDQ* Service?

Yale PDQ Service is a concept that starts with equipment designed to require the minimum of service. At the same time it recognizes, realistically, that prolonged useage of any equipment inevitably will call for service. When such service is required the Yale program provides PDQ service with factory approved facilities, teams of mechanics, comprehensive manuals and a system of dispatching spare parts quickly to any corner of the country.

Q. How does the Yale PDQ Service operate?

A. Through "teams" of technicians, assigned to various functions. Some "teams" operate at the Yale factories, handling manufacturing and engineering assignments. Others are the task forces that operate in the field and come in direct contact with you.

Q. How well are the field teams technically qualified to service my equipment?

A. The teams consist of carefully picked men—factory trained. They operate in the field under the careful surveillance of experienced regional and district supervisors operating out of modern, fully equipped facilities.

Q. Are Yale PDQ Service teams in reality nothing more than rescue squads to meet emergencies?

A. Far from it. One of their important functions is "operational maintenance" which means preventing costly downtime of equipment before it occurs. Also, the field service teams are the ears and eyes for Yale engineering and production. They report on the performance of Yale equipment in customers' plants.

Q. How do I get replacement parts quickly for Yale equipment under PDQ service?

A. Replacement parts are main-

tained at depots in the East, Midwest, and Far West. From these depots, replacement parts are distributed to the network of Yale branches and dealers who carry stocks for immediate delivery.

Q. Do Yale Branches and Franchised Dealers carry every possible replacement part a customer might need?

A. No. But they do carry stocks of parts based on the frequency of demand by customers in the area. Furthermore, they anticipate these demands and stock accordingly. Under a system of centralized electronic data processing the inventories of all replacement parts are kept under instantaneous control. The memory of the electronic computer indicates where parts are shipped, availability by location, rate of depletions from stock, etc.

O. So what?

A. So, when you request a replacement part which is not in stock in your immediate area, it takes only a few minutes to locate its whereabouts throughout the country and arrange for quick shipment to you.

Q. Are replacement parts available for all Yale equipment regardless of age?

A. Yes. This is a particular feature of the Yale PDQ Service. Replacements are available for all equip-Circle 181 on Reader Service Card ment—new or old. Replacement parts for equipment designed for specific applications for which parts are not standard and for very old equipment naturally must be produced on special order.

Q. Where do I get Yale PDQ Service teams when I need them?

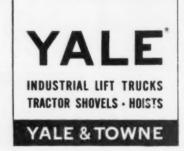
A. The Yale PDQ Service is available in all important industrial areas throughout the United States and Canada (see your Yellow Pages). In addition, all PDQ service centers maintain service shops on wheels manned by factory trained mechanics.

Q. Where can I get further information about Yale PDO Service?

A. Write to your Yale representative or to the Yale & Towne Manufacturing Company, Materials Handling Division, Philadelphia 15, Pa., Dept. X-006.

*Performance - Dependability - Quality

Yale Materials Handling Division, a division of the Yale & Towne Manufacturing Company. Manufacturing Plants: Philadelphia, Pa., Forrest City, Ark.





October, 1960

Circle 181 on Reader Service Card



paper

How they're handling . . .



castings



oil

PAPER

HOW TO HANDLE heavy loads in older plants sometimes presents unusual problems.

International Paper Company wanted a 5-ton overhead crane for a 30-year old building in its Container Division. This high speed, heavy duty crane was to replace two two-ton cranes. The steel structure of the old building, however, could not handle an ordinary heavy crane.

International wanted the cab of the crane to travel with the overhead trolley. From the cab, the operator would electrically control an automatic paper roll grab.

The problem was turned over to Robert Abel & Co., Inc., a Brookline, Mass. Material Handling Equipment distributor.

The result: they specified a crane with steel box girders, built of plate, all-welded. They cut the capacity of the crane to 4 tons, and simplified the grab to increase handling speed.

To make the hoist lighter, they took these two main steps:

They substituted a dynamic lowering brake for a mechanical load break.

 They used a d.c. dynamic lowering circuit for precise control.

Shepard-Niles built the crane to Abel's specifications. Abel delivered, erected, and wired the crane, providing control equipment in the cab and a cable reel on the trolley to conduct power to the grab.

Abel also installed runway electrification material after checking over the entire runway and realigning the rails.

The Mansaver grab is unusual. After the arms have been set, and the load starts to lift, a set of wedges apply additional pressure against the side of the roll. It relies on the weight of the rolls for additional grip.

The crane is a satisfactory performer. Its operation is fast, safe, efficient. Span is 47′ 9″. Hoisting speed, 48 fpm; trolley speed, 150 fpm; bridge speed, 300 fpm. Operating power, 550 volts, 3 phases, 60 cycles. All controls are magnetic, including thermal overload relays, 2 steps of acceleration relays, and a short circuit protection for each motor.

CASTINGS

FOR EFFICIENT MACHINE feeding, use two lift tables. Use one at the input, and the other at the takeoff side.

The result: your stockpiles are always level. The operator is comfortable. He doesn't wear himself out in stooping and stretching.

Globe Hoist Co., a manufacturer of lift tables, practices what it preaches. In its own machine shop (photo), the top castings for power cylinder are delivered by skid loads. They are used in automotive hoists. They go on the lift table at the right of the picture.

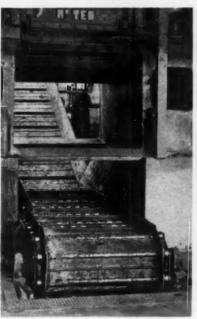
The operator then drills holes through them with a multiple drill. As he removes each piece, he places it on the skid on the lift table at the left. With foot control pedals, he maintains the levels of the two stock piles. He inches up the input table, inches down the takeoff table.

The result: a 20% increase in production output.

OIL

LARGE COLLAPSIBLE tanks made of rubberized fabric store oil for power companies during periods of repair and overhaul.









small parts

A workman drains the oil into the 3,000-gallon rubberized fabric tank. Heretofore, he would have had to handle 50 drums.

The drum-juggling and rigid tank hauling plagued the repair crews when they worked on substation transformers and circuit breakers containing hundreds of gallons of oil. They had to drain it before they could go to work on them.

A Goodyear Pillow Tank rolls, carries compactly in the back of a pickup truck.

Workmen merely roll the tank out flat, pump the oil into it, make the repairs, and pump the oil back into the transformer or circuit breaker.

The tanks cut by almost two-thirds the time it used to take to drain and refill the big power units. This is a substantial savings, especially in an emergency.

RUBBER

NEW APPLICATION of a hinged-steel conveyor belt has supplied the answer to a tire manufacturer's problem of moving heavy, high temperature rubber compounds through manufacturing.

The conveyor is made by May-Fran Mfg. Co., Division of Fischer and Associates, Inc. It is in the new Tupelo, Miss. plant of the Pennsylvania Tire Co. It has been in continual operation for over 6 months, and has needed no maintenance whatsoever except for the usual surface cleaning and lubrication.

A pliable compound falls from a mixer 3 to 4 feet to the conveyor. The falling batch averages 325 lb. It hits with more than a 1,000-lb force. Material runs 275° F.

The conveyor carries it 12 feet up a 35 percent grade to the milling operation.

The hinged-steel conveyor belt was originally developed to handle metal scrap, hot forgings, and the like. It comes in standard widths from 6 inches to 6 feet in any length or carrying capacity. The conveyors are custom engineered from standard components.

SMALL PARTS

IF YOU CAN'T stretch your assembly area, then why not compress the work station? That's what the Allen B. Dumont Co., Industrial Electronics Division, did.

By shortening their individual assembly work stations from 6 to 3 feet, they:

- Gained 40-50% floor space.
- · Provided visual control of parts.
- · Reduced the operator's reach.
- Improved housekeeping.
- · Made operational changes a fast operation.

The modular set-up consists simply of the arrangement of two sizes of Bathey Mfg. Co.'s Flo-Bins on a bench type rack mounted on a Lazy Susan.

The average work station has about 60 bins. Parts range from small hardware and components to brackets, rods, and chassis.

The layout used to take 6 to 7 feet of bench space per operation. The new bins are more compact and use more air space. They require only 3½ to 4 feet. Each will accommodate 80 parts per module when small sized bins are used. ◆



Acme Double Pitch Chains were developed for industries requiring the use of high grade precision chains at a lower cost than the standard series. Acme has developed these chains that are highly adaptable to slower speed power transmission drives. These are widely used in materials handling conveyor systems, by using round parts of the standard chain series and doubling the chain pitch. Acme Double Pitch Precision Chain is available in standard steel and in stainless steel up to 4" pitch for all conveyor systems.

For efficiency and universal usage at low cost for your conveyor system, investigate Acme Double Pitch Chains at your local Industrial Distributor soon.

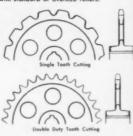
SPROCKETS

Sprockets for Double Pitch Chains can be furnished in either SINGLE TOOTH FORM or DOUBLE TOOTH FORM, as shown below.

Double tooth cutting actually doubles the le expectancy of the sprocket.

Chain rollers contact only every other

life expectancy of the sprocket. Chain rollers contact only every other tooth. When these teeth become worn after long service, the sprockets can be advanced one tooth, thus permitting chain engagement on a new series of sprocket teeth. Double pitch chains can be furnished in either Figure 8 or straight side plate type, with standard or oversize rollers.







Write Dept. 29-L for new ill. 100 page cata-g with engineering section.



RELIABLE CHAIN DRIVES FOR ALL INDUSTRIES

ROLLER CHAINS, SPROCKETS, CONVEYOR CHAINS, FLEXIBLE COUPLINGS, ATTACHMENTS. (Special and Standard

Electronic speeds

IN ONE MINUTE 40 cases of telephones are sorted and moved through the packing system at Western Electric's Indianapolis plant. That's 100 tons a day stacked automatically on pallets. Only hand work: putting them in boxes.

Western designed the system to do away with heavy physical labor and a large truck fleet in the ware-

The system includes:

A high speed electronic sorter for filled cartons

A conveyor that speeds cartons away from packing stations to Automatic pallet loading

General purpose phones, each in a carton, start down a spiral convevor. It buffers and spaces them for the high-speed sorting belt. Reflective tapes stuck on the cartons code them. Photocells eve the tapes, sort all of a kind down one of nine vertical zigzag conveyors to pack-

The packers hand pack eight cartons into one large box, on a short packing belt. The large boxes go up incline belts to nine live roller accumulation conveyors. The conveyors signal when there's a



sorting large volume

SPIRAL slows cartons to space them. They climb (center) to sorting and packing conveyors.

A CONVEYOR system eliminates manhandling tons of telephones each day for Western Electric. It also sorts and palletizes them. Here phones travel down zigzag conveyor, are handpacked eight cartons to a box after sorting.





LIVE roller conveyors signal when pallet load of packed boxes has accumulated before sealing.

PALLET loads of telephones emerge from pallet loader, await fork truck for trip to shipping.

pallet load, shut off when full.

A man stationed at the pallet loader pushes a button on a console to select a line that's ready for the pallets. More conveyors switch the packages to the machine that glues and compresses the boxes. Then they go to the automatic pallet loader. The loader stacks in many preset patterns. Fork trucks take the loaded pallets to shipping and storage.

Photos courtesy of Alvey Conveyor Mfg. Co.



for cost conscious BULK handlers

notes on

Tote is a complete, mechanical, automatic bulk handling system based on metal containers plus filling and discharging equipment. It is designed to handle -- and does handle for a large and diverse list of aggressive, cost conscious bulk handlers - - an almost unlimited list of materials.

This is the TOTE BINheart of the TOTE SYSTEM

Sturdy Tote Bins, which can be hermetically sealed, are built in a choice of aluminum, stainless steel. carbon steel, monel or magnesium in five standard sizes-42, 74, 90, 98, and 110 cubic feet. Tare weight of the most commonly used 74 cubic foot aluminum Bin is 220 pounds. It will hold from 600 to 6,000 pounds, depending upon the type of commodity handled. Standing on legs with a 41/2 inch clearance, Bins can be moved easily with a fork or pallet lift truck.



*Tote and Tote System Reg. U.S. Pat. Off.

Circle 162 on Reader Service Card

This is how TOTE SYSTEM operates . . .

FILL IT

A Tote filling station, designed to meet specific needs. may range from a single, simple spout to a multiple-outlet, automatically operated installation. In handling powdered materials, a Tote Spinner Head and a Tote Jolter may be used to eliminate the angle of repose and insure compaction. Once the Bin is filled, it can be hermetically sealed.

TOTE IT

Movement of Tote Binned material between plants can be by rail or truck, using conventional equipment. If desired, special rail equipment such as the Container Car may be used. Each of these cars carries 26 Bins and is designed for fast loading and unloading. A mileage allowance is paid for the use of these cars. Tote Bins may also be retained in the plant and filled from bulk hopper cars or trucks.

STORE IT

Tote Bins will save up to 15 per cent of the warehouse space usually required for storage of bagged materials, without double-decking, and up to 30 per cent when compared with horizontal storage bins. If ceiling height permits, Tote Bins may be high piled. They can even be stored outside because they are weather-tight.

TILT IT

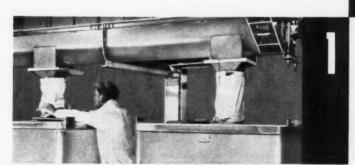
To discharge a Tote Bin, it is placed on a Tote Tilt which tips the Bin to a 45 degree angle. Discharge is through a hinged door in the lower part of the front of the Bin. Standard Tilts are available with either a gravity discharge or a screw feeder. Special type discharges to provide automatic weighing and blending are also available.

IN-PLANT or INTER-PLANT

Tote System is the ideal answer for a wide variety of in-plant handling problems. It can be used to store materials received in bulk hopper cars; it can be used to automate your weighing, blending and processing operations; it provides a perfect bridge between processing and packaging when the two operations are on a different time schedule; and it can be used for temporary storage while materials are laboratory tested.

Tote System is unexcelled for fast, economical and safe movement of bulk materials from the producer to processor. Tote Bins are easily handled and, because they are sealed, offer complete product protection, preserving freshness, flavor, aroma, color and original moisture content.

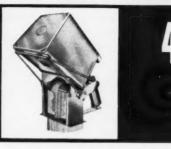
Circle 167 on Reader Service Card











for cost conscious BULK handlers

ONLY TOTE SYSTEM MEETS THE BIG 3 NEEDS

- the efficiency and all-around savings of automation
 - the flexibility and versatility of unit containers
 - the product protection of sealed containers

COMPARE TOTE SYSTEM with bulk-handling methods using bags or fiber drums

Tote System's labor savings alone, resulting from reduced handling time, range between 8 cents and 25 cents per hundredweight of material handled. Tote System also enables you to take advantage of bulk discounts; eliminates recurring container costs; virtually eliminates product loss due to siftage, breakage and incomplete dumping; saves warehouse space; and saves freight damage claims.

In addition, Tote System protects product quality. Once inside the Bin, the product is sealed against water, gases, odors, dust or other foreign material, insects and rodents.

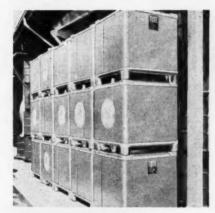
NOW COMPARE TOTE SYSTEM with a "push button" system using fixed storage bins

Tote System gives you the efficiency you want: compact storage; automatic weighing, blending and packaging; surge capacity between processing and packaging. Tote permits the use of a minimum, uncomplicated conveyor system, requiring a minimum of clean-up and maintenance.

The labor cost of operating a Tote System is no greater than that of a fixed storage bin system, while the installation cost is much less.

At the same time, Tote System retains the flexibility and versatility of unit containers. They can be adapted at minimum expense to changes in plant layout and procedures. And the Bins can be used interchangeably for different products.

Circle 168 on Reader Service Card



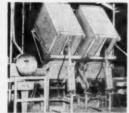
TOTE SYSTEM Saves Money for these Cost Conscious Bulk Handlers

Liquid chemicals are shipped and stored in 300 gallon aluminum Tote Bins.

Tote Bins can be stored outdoors since each Bin is hermetically sealed and weather tight.

This automatic control panel controls the batch weighing of 12 ingredients into a processing operation. Two of the 12 ingredient Bins are shown on Tote Tilts.







Instant coffee is discharged directly to packing lines, with storage space located adjacent to the use point.



Two types of phosphorus powders are blended simultaneously into a bucket elevator.



Various types of flours are blended to obtain a more uniform product. A pneumatic conveying system carries the flours from the Tote discharge station to the sifter.

For a new 32-page report on Tote . . . for a no obligation survey of your plant to determine the saving you can make with Tote, write at once.

TOTE SYSTEM, INCORPORATED

630 South 7th, Beatrice, Nebraska Subsidiary of Hoover Ball and Bearing Co., Ann Arbor, Mich.

⁵Tote and Tote System Reg. U.S. Pat. Off.

Circle 180 on Reader Service Card

Another first from Standard Conveyor

New continuous vertical conveyor revolutionizes floor-to-floor movement

Escaveyor* self-loads, self-unloads, lifts products straight up or down without tipping or jarring. Provides smooth up, down, or reversible service.

How Escaveyor speeds production. Here is the answer to your big need for a fast, continuous flow of commodities from floor to floor. Escaveyor moves commodities at a steady rate of 8 to 10 loads per minute.

How Escaveyor saves space. Escaveyor lifts packaged or unit commodities rapidly from floor to floor with the continuity of a belt conveyor. Yet your product always rides level. And look at the huge saving in space! It takes even less floor space than a conventional monostrand or straightlift conveyor! Escaveyor's size is tailored to fit your package.

How Escaveyor costs less. Escaveyor actually costs less to purchase and install than practically any other type of lift.

It requires less manpower because no manual loading or unloading is required. You also save many square feet of valuable floor space.

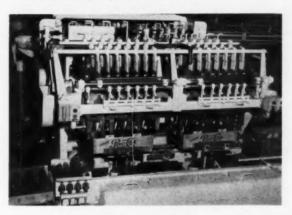
Free brochure. Send for free Escaveyor brochure! It tells how Escaveyor works, and how it can solve vertical material handling problems for you! Get your copy from Standard Conveyor Company, Dept. A-9, North St. Paul 9, Minnesota, or from your nearby Standard Conveyor sales



Circle 159 on Reader Service Card



CARTON OPENER automatically unfolds six-pack cardboard container (top); operator inserts four per case. Bottom, the case loader automatically drops bottles into the cartons.



Automated handling hits the spot

By HENRY LEFER, Eastern Editor

AMERICA'S APPARENTLY UNQUENCHABLE THIRST for soft drinks is one challenge the bottling industry meets with great pleasure.

At Pepsi-Cola's new Brooklyn bottling plant in the Canarsie section of New York, automation and mechanization help to meet the challenge. Like ranks of soldiers advancing to battle, the bottles march off the plant's three lines at a rate that can reach close to 3000 cases an hour—48,000 six- or twelve-ounce and 12,000 twenty-six ounce bottles. From the time the empties head for the washers until the filled bottles are ready for loading and delivery, they aren't touched by human hands.

This plant—which Pepsi believes is the most automated in the industry—uses nearly every production and handling refinement of recent years plus a few that haven't been used on soft drink production lines before.

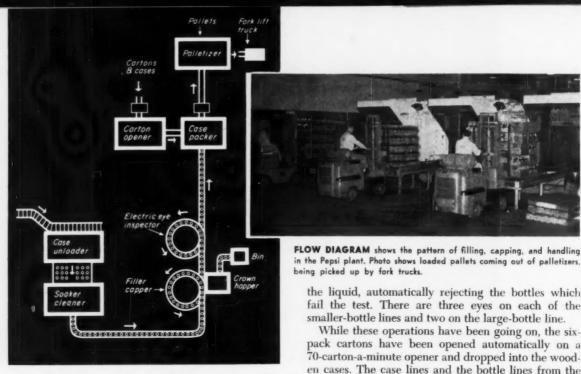
Labor- and time-saving techniques include electronic inspection of bottles; palletized loading and unloading; pre-mix filling and carbonation; automatic carton (six-pack) opening; automatic case packing; and mechanized palletizing. Among the innovations are automatic hopper fillers for bottle crowns; push-

button sterilized syrup tanks; giant palletizers that automatically stack 50 cases on a pallet, automatically staggering their arrangement to give stability to the stack.

The plant is laid out on one floor in 132,000 sq ft of floor space, including a 58,500-sq ft garage with room for 292 trucks. The layout is arranged so that material moves in and out smoothly; even the garage, with its three large entrances and exits is laid out so that trucks enter and leave with no interference with each other.

Let's see how the system works.

First the raw materials. Pre-mixed syrup comes by tank truck from the Pepsi bottling plant in Long Island City, and is pumped into one of the three 8000-gal stainless steel syrup tanks. The tanks have a number of cleaning-sterilizing spray heads inside. By means of pushbuttons from a control panel, the cleaning cycle goes into operation, automatically pre-rinsing, introducing detergent, cleaning, and giving final rinse, all within fifteen minutes. If there is syrup in the tank, the process won't start, and there are automatic controls to prevent detergent from entering the syrup lines. This system eliminates the need for a man to



the liquid, automatically rejecting the bottles which fail the test. There are three eyes on each of the smaller-bottle lines and two on the large-bottle line.

While these operations have been going on, the sixpack cartons have been opened automatically on a 70-carton-a-minute opener and dropped into the wooden cases. The case lines and the bottle lines from the inspectors then converge, and the cartons are automatically loaded, and the cases elevated to the three giant palletizers. Here the cases are automatically cross-stacked, five high with ten cases to a tier, on wooden pallets at a rate of 32 cases a minute. Fork lift trucks remove the loaded pallets and carry them to the delivery area adjacent to the garage.

climb into the tank with a swabbing brush through a manhole, thus doing away with a safety hazard. At the same time it provides better cleaning than was possible before.

Carbonation is provided by a 12-ton liquid CO, system: the CO., like the syrup, is delivered by tank

Water is supplied by a treating system with a capacity of 6850 gal. per hour.

Chilled water, syrup and carbonic gas are piped to the three bottling lines through a system of crossconnected pipes permitting any or all of the three lines to be served at the same time.

Handling Empties

Empties come back to the plant in cases on pallets. The pallets are unloaded by propane-powered fork lifts with 3000-lb capacity, and the cases placed on case unloaders (one for each line). The cases are positioned automatically and pneumatic fingers empty four cases at a time. The bottles are conveyed into the three continuous soakers. Two are set up to handle six- or 12 oz. bottles and one 26 oz. bottles. The bottles are cleaned in a 26-minute cycle, starting at 160 F and ending at 36 F, at the rate of 400 a minute on the smaller-bottle lines and 200 a minute on the larger.

They exit in single file past an inspector who looks for broken or cracked bottles as they head for the 60spout merry-go-round bottling machines, where they are automatically filled and crowned at the rate of 400 a minute. The crown bins, at floor level, have a capacity of 300 gross-about two hours' supply. The crowns are carried up automatically by a magnetic belt to the hopper, from which they are fed to the automatic crowning equipment attached to the bottler. On each bottling line is a cooler-the 12-oz. line coolers deliver 2400 gph. of cold pre-mix; the 26-oz. line cooler delivers 3150 gph.

From the fillers the bottles go to the inspection machines, where electric eyes check the cleanliness of

Distribution

The garage is built in a modified T-shape, with the top of the crossbar 550 ft. long, and the leg-offcenter and close to one end of the bar-160 ft. long. The crossbar and the leg are both 80 ft. wide. The garage entrance, at the long end of the crossbar, has four gates, permitting eight trucks to enter at a time. There is a four-gate exit at the foot of the T and a three-gate exit at the short end of the crossbar, permitting 14 trucks to exit simultaneously. Vehicle motion is always in the forward direction. This speeds up loading and unloading by eliminating backing and maneuvering and simplifying parking. Irving Stitz, manager of the plant, says:

"We can send out our whole truck fleet in minutes each morning, with no bottlenecks and no lost motion."

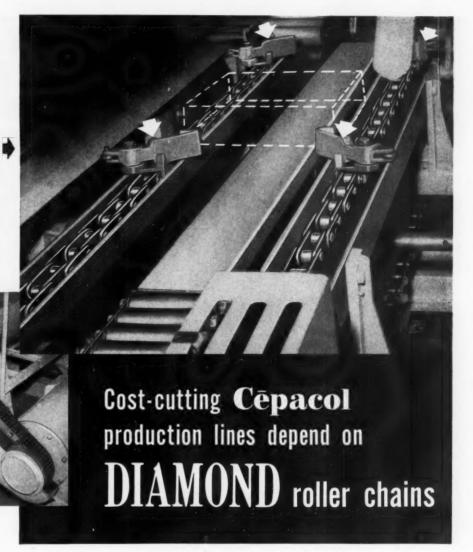
The plant's fork lift fleet consists of nine propanepowered trucks. Area cleanliness is handled mechanically by a floor sweeper and a floor scrubber, both driver-operated. About two thousand pallets are in use at any time. They are made of wood and are repaired at Pepsi's Long Island City plant.

The plant's present output of about a half-million bottles a day is handled by about 70 production workers and 12 fork-lift operators. The plant serves a fleet of about 100 delivery trucks.

By designing the plant for streamlined flow and for maximum use of mechanization and automation, Stitz says, Pepsi has been able to get a uniform product of extremely high purity, at high production rates and with efficient use of its manpower. •

Parallel strands of DIAMOND Roller Chain are equipped with standard attachments adapted for pushing Cēpacol cartons through primary sealing process.

DIAMOND multiple strand, power transmission roller chain operates over 32 and 76-tooth DIAMOND Sprockets on one of Merrell's Z-bar blenders. The 32-tooth sprocket turns at 125 rpm.



• Automated packaging operations help The Wm. S. Merrell Company reduce the manufacturing cost of its well known Cēpacol oral anti-bacterial products. For power transmission and for synchronized conveyor movements Merrell used Diamond Roller Chain. For Cēpacol, as for many other industries and products, Diamond durability, accuracy and dimensional stability—its long, maintenance-free service life—contribute substantially to the efficiency and lower unit cost of production.

Let DIAMOND Roller Chain prove its capabilities to you—in modern packaging operations or wherever the efficient transfer of power or motion is a problem. Write for DIAMOND'S new descriptive catalogs and engineering data.

ROLLER

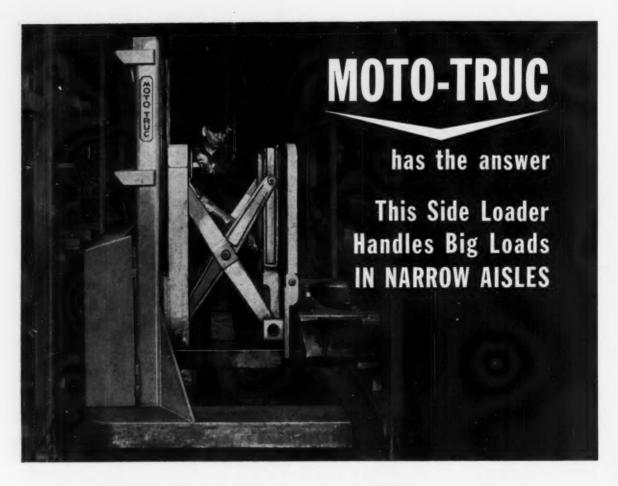
For name of your nearest Distributor, look under "Chains" or "Chains, Roller" in your Telephone Directory Yellow Pages.

DIAMOND CHAIN COMPANY, Inc.

A Subsidiary of American Steel Foundries Dept. 624, 402 Kentucky Ave., Indianapolis 7, Indiana Offices and Distributors in All Principal Cities



Circle 55 on Reader Service Card



• Here's a solution to the problem of handling big bulky loads in narrow aisles. It's a Moto-Truc that stacks sideways. Forks are mounted on a pantograph to permit reaching out over the side—to put a load in a rack or to stack loads. Even long loads like carpet rolls, pipe or rod can be carried down aisles that are only inches wider than the truck itself . . . then quickly placed in storage.

Available for handling loads up to 2,000 pounds, the truck can be equipped with up to 30" reach and built for aisles only 12 to 14" wider than

the load. Available in both walkie and small rider models.

Investigate this handling tool today! WRITE NOW!



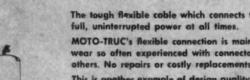
Get full information on this new MOTO-TRUC Walkie Side Loader.



The MOTO-TRUC Co.

1955 East 59th St. • Cleveland 3, Ohio
World's Largest Manufacturer Of Walkie and Small Rider Trucks

POSITIVE POWER CONNECTION - another MOTO-TRUC design exclusive



The tough flexible cable which connects the battery to the motor gives positive assurance of full, uninterrupted power at all times.

MOTO-TRUC's flexible connection is maintenance-free and is impervious to the damage and wear so aften experienced with connector rings and similar power transfer systems used by others. No repairs or costly replacements are needed.

This is another example of design quality that makes MOTO-TRUC a better buy.

The MOTO-TRUC Company

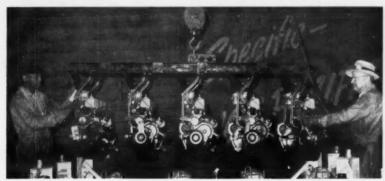
Cleveland, Ohio

Here's how Ford moves parts



CEILING HIGH STACKING is now possible with these tiering racks. Four standard sizes are used which handle almost all items.

SPECIALLY DESIGNED GRABS are used to handle five engines at once. Similar grabs are used to handle axles, automatic transmissions, and other heavy parts.



MAJOR ITEMS THAT GO into building a Ford are packaged in carload lots to speed unloading at their San Jose assembly plant. Daily, they unload parts that vary in size from nuts and bolts to large engines and automatic transmissions.

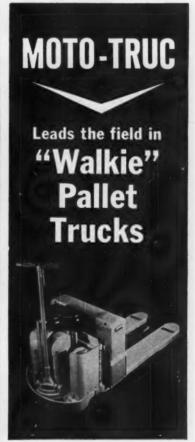
They use fork trucks, tractortrailer trains, and specially-designed grabs. These grabs are especially interesting because they handle as many as five engines at once. Also, they are designed to work well with the company's storage racks.

Above all else, the one item responsible for the efficient flow of material through the plant is the rack. In its simplest form, the storage rack is nothing more than a pallet with vertical risers, usually

square tubes, at each of the four corners. These are joined at the top with an X-brace for rigidity. These risers are tubular, therefore are hollow for their full length, which permits the legs of another tier rack to nest on top.

The plant has four standard sizes of tier racks. These handle everything received, shipped, and stored. They have proved so successful that research is now under way which will enable them to ship as many items as possible in racks to avoid hand handling on arrival.

Some of the racks have casters so that they can be rolled out of the freight cars without using a fork truck. Another advantage of the tier racks: they can be stacked to the ceiling.



The toughest little walkie in the business

■ Built to handle more loads at less cost, the MOTO-TRUC walkie pallet trucks is the most popular model on the market. Its ultra-simple construction means far less maintenance and greater dependability. Yet, in spite of its small size, it's built to take rough treatment and will give years of useful service on the severest jobs.

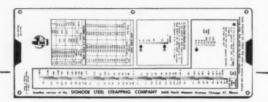
Moto-Truc walkie pallet trucks are available in 4,000 and 6,000 pounds capacity models with fork dimensions to fit any load.



1955 East 59th Street Cleveland 15, Ohio Circle 121 on Reader Service Card

BUNDLE...BOX





New free Steel Strapping Calculator helps you buy steel strapping at least cost according to your needs, and shows new strength figures for Signode steel strapping. Let us send you one.

...BALE

If you tie your shipments... here are 12 pointers to superior results at less cost

- 1 Steel strapping is strong. Even our smallest size has a tensile strength over 400 pounds; our largest, over 15,000 pounds. This strength is unaffected by age, heat, cold, moisture, or dryness.
- 2 And it is low in cost. For equal lengths of equal strength, we haven't found anything that costs less than steel.
- 3 You can pull high tension with steel strapping, and it holds without stretching. This tension is what binds your load together, or reinforces your package.
- 4 Signode steel strapping is a quality product, carefully made and constantly improved to do its job better. It is available from Signode in a wide range of sizes.
- 5 Because it is well made, Signode steel strapping is smooth, pleasant and safe to handle.
- 6 It is firm and straight, easy to put on square, without kinks, twists, or tangles.

- 7 It is flexible enough to loop easily around a package or bundle and to pull tight around corners
- 8 It is joined by a visible, inspectable mechanical seal that is dependable in spite of dirt, moisture, or oil. This seal can show your trademark in colors.
- 9 It cannot be slipped on and off your package, bundle or bale... prevents pilferage.
- 10 It can be applied at any desired speed, without waste, with fast Signode hand tools, power tools, and automatic machines.
- 11 Signode men train your operators, keep Signode tools in good order, suggest ways to reduce your cost and improve your results. Signode has specialized in steel strapping for over 45 years.
- 12 There are three Signode manufacturing plants, each with its own sources of steel, to assure you of the steel strapping you need, even in times of shortage.



First in steel strapping

SIGNODE STEEL STRAPPING CO.

2618 N. Western Avenue, Chicago 47, Illinois

Offices Coast to Coast. Foreign Subsidiaries and Distributors World-Wide In Canada: Canadian Steel Strapping Co., Ltd., Montreal • Toronto Circle 149 on Reader Service Card





INSTALL On Your Towing Tractors D&M ALL WEATHER CAB with STEEL ROOF

AT A REMARKABLE LOW COST

Rain, wind or snow your towing job goes on efficiently and without discomfort to the

WHEN ORDERING

ve make and model of towing tractor.

AVAILABLE FOR ALL TYPES OF TOWING TRACTORS

 Heavy Duty Steel Roof VISIBILITY & SAFETY Clear vision is assured by the large steel encased safety glass wind-shield with electric windshield wiper.

EASY TO GET IN AND OUT WITH OUR LEFT, RIGHT AND REAR CUR-TAINS, MADE OF HEAVY CANVAS, UNBREAKABLE GLASS, TWO-WAY HEAVY DUTY ZIPPERS.

COMPANY WE 3-1613 12186 PETOSKEY AVE., DETROIT 4, MICHIGAN



Circle 61 on Reader Service Card



TWO-LEVEL upright rug storage rack holds room-size rugs. Balcony is reached by ladder.

FIRE BARRIER shown above between carpet storage racks is chemically impregnated wood.



Rack Storage cuts product

BIGELOW-SANFORD NEEDED a method to store 5,000 standard rolls of carpet as well as stocks of samples and rolled up rugs at its new Lyerly Mills installation at Lyerly, Ga.

Its engineers recognized the disadvantages of just stacking one roll on another. Not only is it difficult to handle carpets in this fashion, but the pressure is bad for them.

Several years before the company had successfully experimented with a storage rack system at its Hackensack, N.J. warehouse. They made detailed plans for warehouse layout, as well as complete plans for storage.

The installation consists of variations of a wellknown storage rack system. It is supplied 97% assembled, and consists of three basic units:

A floating wedge lock

An upright frame

A safety support bar.

The frame and support bars are joined by the floating wedge lock, which is installed without tools. The lock eleminates the need for bolts, screws, and special tools.

The racks are made 22 feet high, and make up 9 decks. One upright frame is spliced atop the other. This arrangement lends itself to ram loading and unloading all the way up to the warehouse ceiling.



damage

Chemically-impregnated wood carriers serve as fire-retardant separators in the storage rack system.

Special Upright Storage

This rack holds rolled up rugs (such as 9 x 12) that are ready-cut to size. A 2-deck rack, the upper deck constitutes a balcony with access by a ladder. The relatively light rolls are stacked vertically in the stalls.

Carpet samples are readily accessible from a special sample carpet storage rack. Compartmentalized storage racks with horizontal support bars placed about 30 inches apart make up the system. The racks are carried all the way to the ceiling. Catwalk balconies provide access so that samples can be hand-picked at any height.

Company officials report a general reduction of damage to merchandise. •

Photos courtesy of Sturdi-Bilt Material Handling Div., Union Asbestos & Rubber Company.

R-W ELECTRIC OPERATORS

for doors and gates that...

SWING - SLIDE - FOLD







QUALITY FEATURES . . .

Top quality 115 volt, Control Circuit Reversing Starter.

Open—Stop—Close Push Button Station or other optional selection of controls available as required.

Sturdy base and mounting Brackets of Heavy gage steel.

Heavy Duty, Rotary-Type Limit Switch for Positive Door Control — Silver to Silver Contact.

> Heavy Duty Roller Chain Drive.

Heavy-gage steel mounting bracket with easy to adjust Idler Assembly . . assures proper chain tension.

Heavy-Duty, Disc Type Brake for Positive No-Coast Control.

Instantly Reversible Genuine Gearhead Motor.

Rugged Safety Clutch for Dependable Operation. Fool-proof chain

Latch

CHECK THESE R-W FEATURES . . . THEY ASSURE TOP-PERFORMANCE, ECONOMY AND YEARS OF DEPENDABLE SERVICE UNDER THE RUGGED DEMANDS OF

Sturdy Door Bracket.

Bracket.

Sturdy, fool-proof Emergency Release for Instant Manual Operation... a must on quality operators... permits full-control of doors and gates under any circumstance.

The unit, above, is typical of the complete line of R-W Electric "AUT-O-DOR" Operators . . . each contains every desirable feature necessary for long, trouble-free operation. R-W Electric Operators are not converted residential units but are specifically designed to meet the demands of hard, constant industrial use. Available in a complete line to meet your specific requirements . . . power units range from 1/8 H.P. to 15 H.P. All components are the best available . . . all are nationally distributed and serviced. R-W Electric Operators will increase plant efficiency and employee comfort and safety . . . smooth automatic door operation — assures fast, easy movement between departments . . . saves time, heat and conditioned air.

Write for complete information . . . request your free copy of Catalog No. 200.

INDUSTRIAL USE!



Richards-Wilcox

MANUFACTURING COMPANY

ELECTRIC OPERATOR DIVISION

420 W. THIRD ST. • AURORA, ILL. • Branches in all Principal Cities

Circle 138 on Reader Service Card

GO UP WITH CONFIDENCE ON

BALLYMORE

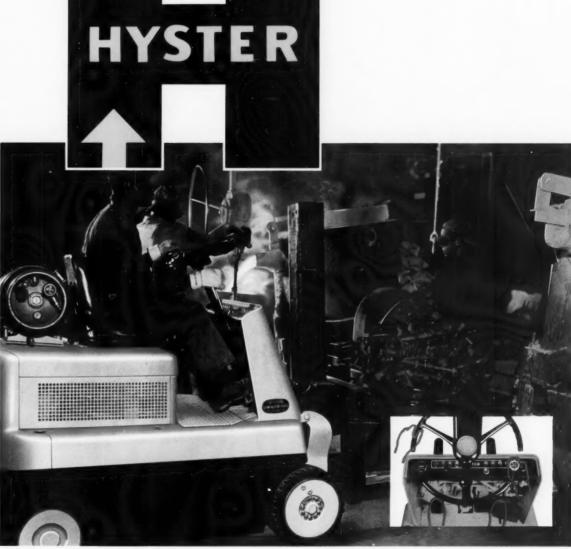
Safety-Step



Now...Ballymore combines welded steel or aluminum safety treads with wide-base pyramid design to offer extra safety and stability. Ballymore ladders let you climb quickly... and with confidence—any required height up to 15 feet. Spring-mounted casters that retract when you step on the first step is another safety "plus." They let you roll the ladder easily, yet grip the floor surely to provide safety at all levels.

All welded, corrosion-resistant Ballymore Safety-Step Ladders are available in four types—with 47 models to choose from. Step up to a new standard of safety today.





Monomast high visibility upright — a Hyster exclusive.

monotrol speeds production handling Only HYSTER® has it!

At American-Standard Plumbing & Heating Division—Hyster lift truck with Monotrol control handles millions of pounds per month—in brass foundry at Cincinnati, Ohio.

All driving functions except steering are foot controlled—for safe, rapid handling.

Right foot Monotrol pedal controls power—forward-reverse—Hystamatic transmission. Left foot controls brakes and truck inching. Hands are free for steering and load control.

Safest, easiest trucks to drive. Quickest to service—cheapest to maintain.

Call your Hyster dealer or write for literature.

INDUSTRIAL TRUCK DIVISION—Lift trucks, mobile cranes, straddle carriers
TRACTOR EQUIPMENT DIVISION—Construction and logging equipment
MARTIN TRAILER DIVISION—Heavy machinery hauling trailers
INTERNATIONAL DIVISION—Overseas manufacturing, soles and service
Factories: Portland, Oregon (Home Office) • Danville, Ill. • Peoria, Ill. • Kewanee, Ill. •
Nijmegen, The Netherlands • Glasgow, Scotland • Sao Paulo, Brazil • Sydney, Australia (Licensee)



HYSTER COMPANY

INDUSTRIAL TRUCK DIVISION
P. O. Box 847 • Danville, Illinois



FULLER PNEUMATIC CONVEYING SYSTEMS INCREASE PRODUCTION, CUT CONTAMINATION FOR GOODYEAR

Recent installation of specially engineered Fuller Airveyor® pneumatic conveying systems to handle pelletized rubber has helped Goodyear Tire and Rubber Company increase production. These systems are the latest Fuller design resulting from over 15 years experience in pneumatic conveying of rubber pellets. These completely enclosed automatic systems virtually eliminate contamination problems and greatly reduce the chance of loss due to spoilage.

Automated handling of crude rubber with Fuller Pneumatic Conveying Systems, in place of conventional rubber slab sheeting on a mill, is the key. One Airveyor system conveys the pelletized rubber from the pelletizer to a weigh station, a distance of 500 feet. Four more systems operate from the sink dump scales to inlet spouts of the finish-run Banburys.

All of these Airveyor pneumatic conveyors are of the vacuum type, employing positive pressure exhausters for air supply. Each conveying system is equipped with its own individual bag-type filter, automatic in operation, which provides for 100% visible dust retention. Exhausters and filters are located on the roof. A control panel permits manual or automatic operation of the entire handling system.

If you are handling dry, bulk, granular materials, a Fuller Conveying System application-engineered to your process can be equally advantageous. Look to Fuller, whose range of products coupled with experienced know-how offers you the best *single* source for solving pneumatic materials handling problems. Just call or write Fuller today outlining your problem—no obligation, of course.



FULLER COMPANY
164 Bridge St., Catasauqua, Pa.

Subsidiary of General American Transportation Corporation
Offices in Principal Cities Throughout the World
Circle 70 on Reader Service Card



MATERIAL HANDLING ENGINEERING

Moline link attachments adapt Moline Chains to many jobs

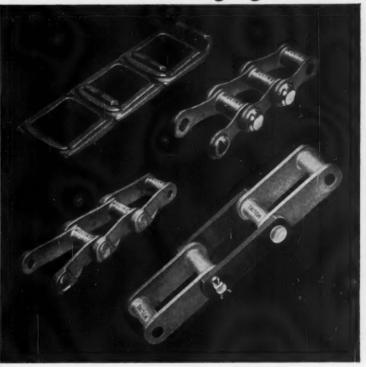
STANDARD ATTACHMENTS Only a few of the wide variety of Moline Chain attachments are shown here.





Specializing in the manufacture of chains

LEADER FOR 60 YEARS



Conveying and Elevating

THERE IS NO LIMIT to the number of jobs which can be handled by Moline Chains. With the wide variety of standard link attachments available, the possibilities for adaptation are endless. Both right and left hand types are made to the exact size and pitch of the regular chain links.

With Moline Chain, equipped with standard attachments, you can push, pull, scrape, elevate and carry an endless variety of materials and objects.

At the same time you can cut your overall chain costs because Moline Chains and attachments are engineered for maximum efficiency...trouble-free performance...and long life. Only Moline Chains are triple-tested to guarantee maximum quality control.

Write for descriptive literature today!

MOLINE MALLEABLE IRON COMPANY

St. Charles, Illinois

Circle 117 on Reader Service Card

CM METEOR HEAVY DUTY, LOW HEADROOM ELECTRIC HOISTS fast __rugged ... dependable

METEOR wire rope electric hoists are designed for extra heavy duty service with minimum maintenance. Push button controlled and available in a variety of suspensions—lug, hook, plain trolley, geared trolley and motor driven trolley. Many hard working "CM" features provide maximum efficiency, durability, economy and safety.



CM CYCLONE HAND CHAIN HOISTS

low cost ...high speed ...dependable CYCLONE is a high speed, spur geared hoist. Made of steel and aluminum alloy, its light weight makes it so easy to handle, yet it's constructed for rugged, heavy duty performance. CM-Alloy Steel Welded Chain provides long wear and complete flexibility. Low headroom, 96% efficiency, sealed in lifetime lubrication, and many other proven CM features deliver dependable, efficient and safe service at minimum cost.

CAPACITIES: From 1/4 to 10 tons. 1 ton model weighs only 36 pounds. **Bulletin No. 145**

CM PULLER gives a man giant strength

Has a thousand-and-one uses in lifting, pulling, dragging or stretching. 3/4 ton capacity handles 1500 pounds with only 58 pounds effort. Indispensable for maintenance, rigging and construction. Positive braking holds load automatically with non-slip action. Light but rugged construction from heat treated alloys of steel and aluminum. Famous CM-Alloy steel welded link chain provides complete flexibility and super-strength with non-kinking, self-cleaning advantages. CAPACITIES: From 3/4 to 6 tons. 3/4 ton weighs only 14 pounds.

Bulletin No. 146

FOR OVER 75 YEARS, Chisholm-Moore has offered buyers the newest and most efficient designs, the most rugged construction, and the greatest number of valuable operating and safety features. CM products operate with a very minimum of maintenance, giving years of satisfactory service.



Here is the first truly heavy duty version of the small electric hoist. Equipped with self-adjusting magnetic brake plus ultra-modern regenerative electrical braking. CM-Alloy flexible link chain and jam-proof chain guide assure trouble-free lift-

ing even at extreme angles. With lowest headroom, push button control, light weight and attractive price, CM Lodestar is built to serve you for its normal life without costly maintenance or interruptions in work schedules.



CM CYCLONE TROLLEY HOIST for low headroom requirements Heavy duty Cylone hand hoist built integral with a rugged plain or geared trolley for installation where

extremely low headroom and maximum lift are required. Trolley is adjustable for various size beams.

CAPACITIES: From 1/2 to 6 tons.

Bulletin No. 145



CM supplies a wide variety of hand operated overhead traveling cranes, jib cranes and portable cranes for use with hand and electric hoists.

CAPACITIES: From 1/2 to 10 tons. Bulletin Nos. 152, 153, and 154

CAPACITIES: From 1/2 to 5 tons. Single or two speed control. Only 110 volts at push button control **Bulletin No. 142**

> CAPACITIES: From 1/8 to 2 tons. Single and 3 phase. 1/4 ton model weighs only 51 pounds. **Bulletin No. 158**



CM TROLLEYS

Choose from the complete CM line of dependable trolleys. Available in three bearing types: Timken Tapered Roller Bearing, roller bearing, and ball bearing. Plain or geared. CAPACITIES: From 1/4 to 12 tons. Bulletin Nos. 139, 140, and 141

WRITE for descriptive bulletins and name of your local distributor. Stocking distributors in all principal cities.



CHISHOLM-MOORE HOIST DIVISION

Columbus McKinnon Corporation

TONAWANDA, NEW YORK

Regional Offices: CHICAGO . CLEVELAND . NEW YORK

In Canada: McKINNON COLUMBUS CHAIN LIMITED, ST. CATHARINES, ONTARIO

Circle 185 on Reader Service Card



Prize Winner! This beer container won a Silver Award at the Fifth Annual Fibre Box Competition.

What is the story behind International Paper's new pull-tab beer container?

Read about International Paper's new prize-winning beer container.

It is ideal for high-speed packaging operations.



Lift-pull-tear-and it's open! But that's only half the story.

The other half is the highspeed end-loading feature of this new corrugated beer

container created by International Paper's Container Division. The judges at the Fifth Annual Fibre Box Competition liked it so much they gave it a Silver Award (one of ten different awards won by International Paper).

The same design and manufacturing ingenuity goes into every International Paper shipping container. And every container gives you these 7 extra values:

- 1. First-class engineering. Truly creative packaging by the same team that originated the tube-and-cap design, now standard in the industry, and many others.
- 2. Time-proved boxmaking skill: several hundred million containers annually.
- 3. Built-in savings. Maximum strength,

least weight, best cost-saving design.

- 4. Convenient delivery: 21 strategically located box plants.
- 5. Gator-Hide kraft for greatest strength, smooth surface, uniform color.
- 6. Fair prices in line with top quality.
- 7. A dependable source of supply. The only containers backed by the full resources of International Paper.

See your Container Division packaging expert. He's a good man to know.



INTERNATIONAL PAPER

CONTAINER DIVISION . NEW YORK 17. N. Y.

Circle 92 on Reader Service Card



With "Ship To" frame pre-printed by corton maker, shipping clerk uses Multistamp Duplicator to address up to 1000 pieces of the same shipment with the same lowcost stencil . identically, accurately, quickly, readly.



Using Multistamp FORM-CUT stencil, printing the form and fill-in data at the same time is an easy, one—man one—hand operation. Yaur form is custom die-cut in the stencils—yau fill them in with ball point pen or type-writer.

MULTISTAMP Stencil Addressing System Quickest Way for Volume Shipping

EASY-TO-READ FADE PROOF QUICK DRYING

Shipping department addressing errors are virtually eliminated when address and routing information are printed directly on cartons by the Multistamp Stencil Duplicator. The print becomes an identical smear-proof fade-proof water-proof permanent part of every carton. Following simplified Multistamp Marking Methods, the address stencil is cut in the same typing which fills out shipping order, bill of lading, invoice, and other forms. One typ-



Circle 122 on Reader Service Card

PRODUCT

Continued from page 50

Remote Control Elevator

Has service platform enabling one man and one machine to handle order



picking from floor to ceiling then make delivery to shipping dock. Full set of controls on platform. Platform elevates 128 in, lowers to 6 in. Capacity–2,000 lb. Battery–12 volt, 6 cell, 25 plate. Addition of a service table permits picking small stock items and less than carton quantities.

Lewis-Shepard Products, Inc.
Circle 306 on Reader Service Card

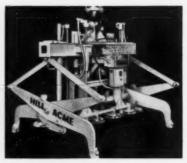
Padded Shipping Bags In 4 Sizes

Maker has added them to line. They're intended for packaging publications, bottled liquids, men's clothing accessories, slide rules, hardware, and the like. Sizes range from 6%" x 14%" to 12%" x 14%".

Jiffy Mfg. Co.
Circle 307 on Reader Service Card

Lifts Billets And Sheets

Combination lifter uses vacuum cups and scissors tongs. Handles



single sheets, slabs, billets, ingots. Tongs are automatic; face of material

Continued on page 113

MECO engineered feeders

yours is here



MECO engineered feeders are your best investment in quality control if you use bulk materials from crushers, bins or hoppers. Even difficult materials—wet, sticky clay, fine dust, sharp chunks or heavy lumps—can be metered at a uniform rate of feed (a rate that you can easily change if you wish).

This is the superbly engineered line for heavy duty feeding of quantities up to 150 tons per hour over any distance: Reciprocating plate feeders for shale, fire clay, coal and rock. Apron feeders for sticky clay, wet or granular materials. Belt feeders for maximum feed control accuracy with chemicals, aggregates. Disc feeders for short-distance proportional feeding from bins. Easily adjustable for accurate batching of pigments, additives, ground or crushed material and chemicals.

To obtain the engineered approach to your feeding application write The Manufacturers Equipment Company, 218 Madeira Ave., Dayton 4, Ohio. Request Bulletin F-1.

MECO

ENGINEERED BULK MATERIALS
HANDLING EQUIPMENT

Circle 183 on Reader Service Card
MATERIAL HANDLING ENGINEERING



NEWS . . . From

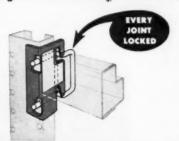
Speedrack®

Headquarters

PICTURE OF A MAN MAKING MONEY!

Assemble without tools

No cutting . . . No bolting . . . No welding



"All Purpose" SPEEDRACK is factory engineered and pre-fabricated... with interchangeable Upright Trusses and Load Beams... instantly adjustable to meet changing inventory requirements.

Assembly of "All Purpose" SPEEDRACK upright trusses and load beams permits erection and adjustments for load heights by unskilled workmen. Every SPEEDRACK component is fully reuseable. No waste for cutting and fitting.

Write for the new SPEEDRACK application bulletin.

Three Ways . . . with "Drive-In" SPEEDRACK

ONE... warehouse capacity is multiplied with pallets stored four or more tiers high, yet safe from crushing stock or toppling over.

TWO... solid storage, no space wasted by cross aisles. Rigid, self-supporting, without attachment to floor, roof or walls.

THREE . . . accessibility of all pallets reduces cost of in and out stock movements.

The extra storage space provided by SPEEDRACK costs but a small fraction of the cost for constructing additional storage buildings.

"Know-how" from your SPEEDRACK materials handling representative

Positive facts about MAKING MONEY in your storage areas will be prepared by your SPEEDRACK representative.

Let him survey your requirements and bring you, without cost, the "Know-how" from many million feet of money making SPEEDRACK installations.

WRITE Today . . STORAGE PRODUCTS CORPORATION

4410 Oakton St., Skokie, Illinois

speedrack® SAVES SPACE

15

Circle 157 on Reader Service Card



CRUCIAL COMMITMENT

"Don't forget the delivery date on our purchase order. That truck must be at Donora by Tuesday the 15th!'

Those were the parting words of American Steel and Wire's purchasing agent, as Howard Black walked out the door.

He meant exactly what he said too! Heavy seasonal demand for the plant's fence and welded reinforcing wire fabric was forcing the issue on a tough warehousing problem.

To meet that delivery promise, Elwell-Parker had exactly 6 weeks to design a special truck, build it, test it and ship it to Donora. It was a tough commitment but Elwell-Parker came through with time to spare-and an additional order was placed for a duplicate truck.

Result-Storage space was doubled and peak demands were met by off season production.

As always, the close-knit staff of ELPAR design and production specialists moved quickly and effectively to solve a customer's handling problem. High performance-fast delivery-and, the "right" price are all extra values you can expect when you buy an ELPAR truck.



The ELWELL-PARKER **Electric Company**

4231 ST. CLAIR AVENUE CLEVELAND 3, OHIO

Leading producer of electric powered fork, platform and crane trucks

PRODUCT

NEWS

protected by supporting rolls attached to tongs arms. Vacuum cup frame actuated by air cylinders. Cups have own vacuum system that includes motor, pump, reservoir.

Hill Acme Co.

Circle 308 on Reader Service Card

1 Pass Prints 4 Sides

The 4-Way Printer prints 1 to 4 sides of set-up cartons; delivers 35

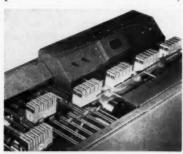


per min. It's quick and easy to operate; cuts down on pre-print carton inventories. Maker claims printing press quality, perfect register. Ink dries instantly; machine holds enough for full day's run. Cleanup once a week. Impressions from 1" x 1" to 10" x 20". Printer sets in line before or after sealers of any make.

Algene Marking Equipment Co. Circle 309 on Reader Service Card

High Speed Checkweigher

Model 525 checkweighs 275 units per minute with consistent accuracy

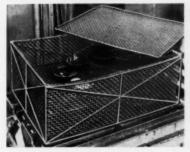


of 1/25 oz. Requires no change-over for package sizes. Continuous motion weighing and rejection. Resistant to water and dust. Fits into existing lines

> Illumitronic Engineering Circle 310 on Reader Service Card

Heat, Chemical Treat Basket

Made of No 2 mesh Type 330, Inconel, Monel, other alloys for any treating operation. Dividers available for parts separation. Baskets are 32%" x 24" x 12"; have %" rod sup-



ported frame. Mesh diam is .120 in. Take 500 lb load; may be used in pusher type installations, or, with handles, in pit furnaces.

Wiretex Mfg. Co.

Circle 311 on Reader Service Card

Is It Moving?

Simple, reliable, low cost device detects motion or lack of it. Detects back-ups or stoppages on conveyors or belts. Senses less than 1/2 rpm or lin-

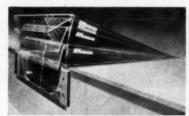


ear motion converted to rotary motion. Tells when motion is completely stopped. Sealed in nylon housing 2½" high; weighs few oz. Operates from -40° to +240°F; isn't affected by magnetic fields.

> Gaylord Products, Inc. Circle 312 on Reader Service Card

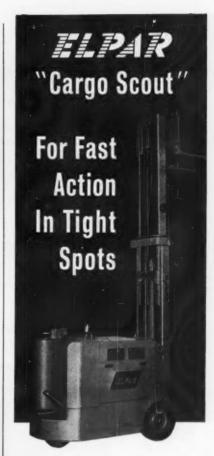
Automatic Dock Board Lip

Automatic lip-actuating feature increases flexibility, safety and ease of



operation of Adjust-A-Lip dockboard, says the maker. Board lifts from level

Continued on page 114



SHORT TURNING

Short wheelbase, rounded rear corners and 180° turning angle of ELPAR's "Cargo-Scout" assure maximum maneuverability in narrow aisles, crowded docks and other confined spaces!

HIGH SPEED

ELPAR's high speed lift and travel plus fast acceleration assure more work in less time

SAFETY

The stand-up operator's position on the ELPAR "Cargo-Scout" means he can get off fast in emergencies. Duplicate hand and foot controls make it easy to drive this truck backward when bulky loads limit forward vision.

4 models - 2, 3, 4, & 5,000 lbs.

Write For Descriptive Catalog - Specify capacity required.





The ELWELL-

4231 St. Cigir Avenue, Cleveland 3, Ohio Circle 59 on Reader Service Card

PRODUCT NEWS

position with lip in protected vertical position. When it's high enough to swing over truck bed, lip extends to working position and locks automatically. Fully flexible, lip may be extended or retracted any time, and retracts automatically when truck pulls out.

The Kelley Co.

Circle 313 on Reader Service Card

Loose Load Seals Car Bulkhead

For hard-to-control, loose loads like potash, rock salt, fertilizer. Weight of



material, as it moves, presses the extended sides of flexible steel-rein-

forced bulkheads tight to car walls. Load movement is then restrained. Said to install in ¼ the time needed for wooden bulkheads. A pair weighs 70 lb. Nothing spills out when car is opened. To unload, you cut the bulkhead bottom to top; tack the cut ends to car walls.

Signode Steel Strapping Co.

Circle 314 on Reader Service Card

Pallet For Irregular Shapes

Stack-On Pallet handles, tiers, transports irregular shaped products in



groups. Legs are demountable, are double braced, and come in various lengths. There are no nuts or bolts, legs slip into pockets quickly and securely. Sizes: 42" x 60" and 42" x 48". Both have 4,000 lb capacity.

Johnson-Flaherty

Circle 315 on Reader Service Card

One Man Dumps Boxes

Pick-up and dumping of centrally located steel containers speeded up throughout entire route by Pak-



Gainer. Open-jawed, self-catching hooks on lifting arms eliminate jockeying truck to engage lifting ears on container, maker says. Handles containers from 1 cu yd through 6 cu yd capacity. For wet and dry refuse. Many other features.

Cobey Corp.
Circle 316 on Reader Service Card

Continued on page 116

Circle 78 on Reader Service Card



at Marion Power Shovel Co.

MARION, OHIO





A FEW "RIDG-U-RAK" USERS:

INTERNATIONAL HARVESTER CO.

GENERAL GROCER CO.

WALGREEN DRUG STORES

OHIO VALLEY HARDWARE CO.

A-P PARTS CORP.

WESTINGHOUSE ELECTRIC CORP.

MARION POWER SHOVEL CO.
Div. of Universal Marion Corp

SNYDER DRUG STORES

COURTALDS CARPET CO., LTD.

FEDDERS CORP.

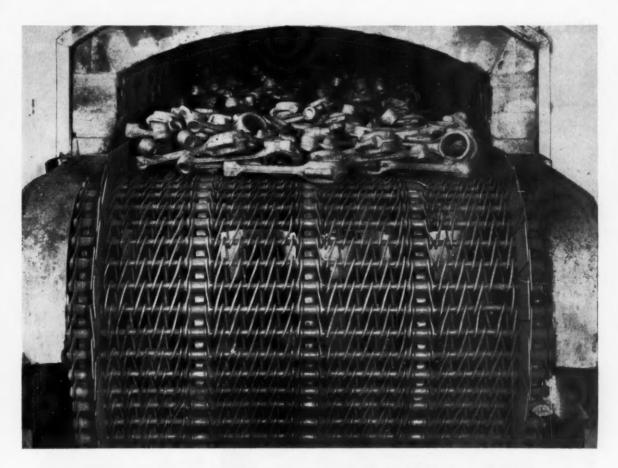
This outdoor installation of 23 sections of "Ridg-U-rak" stores small and medium sized parts and patterns for Marion Shovels.

"Ridg-U-rak" Systems require only 2 basic parts—Frames and Stringers. No bolts, nuts or tools are needed. Each Stringer has an integral double engaging hook pad at the ends. Each end locks into an external column flange and slots spaced at 4" intervals. Only "Ridg-U-rak" has this combination of external flange and slot arrangement to position and securely lock each Stringer. For a detailed description of sizes and capacities available, write for new Catalog 107-J.



Also Ridg-U-rak Drive-Thru Systems Cat. 108-J.

BERNARD GLOEKLER NORTH EAST CO. NORTH EAST, PA.



Materials don't get manhandled on (USS) Cyclone Conveyor Belts

How much time is wasted in *your* plant because materials have to be manhandled—loaded and unloaded manually, or moved from place to place by old-fashioned, inefficient methods? USS Cyclone Conveyor Belts carry an astonishing variety of products through every kind of processing operation. They can pare hours—sometimes even *days*—off normal production time. They put an end to frustrating time lags, bottlenecks and down time. Naturally, this speedier production means higher profits.

Cyclone is the world's largest producer of metal conveyor belts. A Cyclone belt specialist can look over your operation and tell you which of our eight basic belt types will fill your requirements. Then a special conveyor system can be designed *exactly* to your specifications. Send the coupon today for a free booklet on USS Cyclone Conveyor Belts. No obligation.

USS and Cyclone are registered trademarks



American Steel & Wire Division of United States Steel

Cyclone Sales Offices coast to coast.

American Steel & Wire, D	ept. 0299
614 Superior Ave., N.W., C	Sleveland 13, Ohio
Please send me your free	booklet on USS Cyclone Conveyor Belts.
Name	
realife	
realife	1
Address	•

Circle 46 on Reader Service Card

PRODUCT NEWS

Low-Cost Grain Unloader

Said to cost 1/10th as much as car dumpers. Superior Boxcar Unloader hangs from an overhead monorail. The rail moves into open grain car through the door. Unloader has folding conveyor wings as wide as the car; one for each end of car. They work separately or together; feed

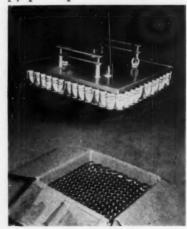
grain at high speed through the door into the track hopper. Sections retract when car is emptied. Unloads 4 cars per hour, including time for spotting, removing doors, clean-up.

The Superior Co.

Circle 317 on Reader Service Card

Magnet Takes Cans From Case

Permanent magnet lifts cans, removes them from carton, places them on conveyor. Ceramic magnets provide the power. Manual discharge easily releases the load. Operator simply presses pair of handles; load is



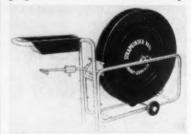
forced from magnetic field. Device has no wires or coils, no maintenance

Stearns Magnetic Products

Circle 318 on Reader Service Card

Lifts Heavy Coils

Mobile steel strap dispenser ends lifting coils: needs little effort to move them. Model 416 handles %" through %"-wide vibrated wound flat strapping and all sizes of oval steel strap-



ping. It's 10½" wide; fits narrow aisles. Tray on handle carries seals and

A. J. Gerrard & Co.

Circle 319 on Reader Service Card

3-Wheeler For 5 People

Model 734 electric Truckster is rated for 1,000 lb payload plus op-

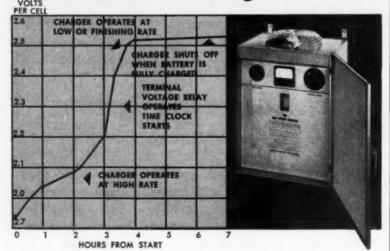


erator and 1 passenger. Travels in 50" aisles; gives 50 miles per battery

Continued on page 118

NWET-MAL charger

Automatically adjusts high and low rate charge to meet battery needs

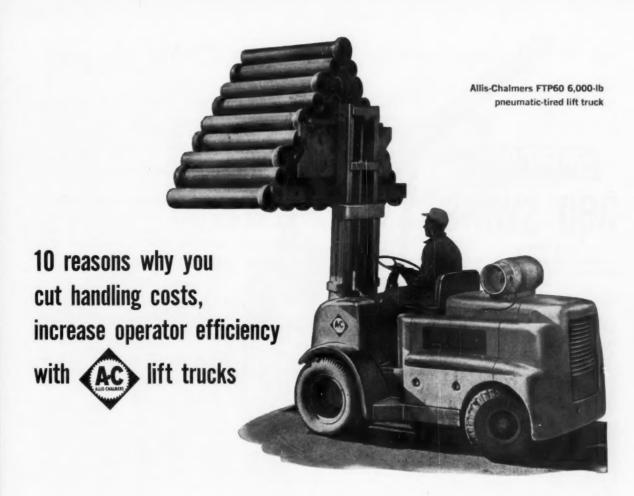


With a Power-MAC you can't make a mistake and damage lift truck batteries by over-charging. This chart shows how Power-MAC two-rate charging delivers a high current during the first hours of charging, then tapers off according to the battery's requirements, and finally turns itself off automatically when the battery is charged to full operating capacity.

Increase the efficiency of your lift trucks by extending battery life and maintaining original capacity. Bulletin 101 A9 gives all the Power-MAC facts. Call or write for your free copy today.

Motor Appliance Corp.

5743 WEST PARK AVE. . ST. LOUIS 10, MO. . MI. 7-1138 Circle 119 on Reader Service Card



- 1. Better performance, indoors or out, with heavy-duty Allis-Chalmers industrial engine.
- 2. Built for rough vard conditions. Rigid, deepsection steel frame takes stresses, holds parts in alignment.
- 3. Excellent balance of power and weight design permits outstanding gradability and stability.
- 5. Choice of standard transmission or twospeed POWER-SHIFT torque converter drive to fit your needs.
- 6. Operator works in comfort. Cushion seat is adjustable for leg room,

- 7. Tires last longer than standard tires . . . have much more rubber where wear is greatest.
- 8. There is extra reserve of electrical power for cold-weather starting, other needs, with 12volt system.
- 9. New steel hydraulic lines eliminate chafing and vibration wear.
- 4. Faster travel speeds match your job require- 10. Less downtime because of outstanding ease of servicing and accessibility.

Let your dealer show you these and many other features of the better-than-ever Allis-Chalmers pneumatic lift trucks.

Allis-Chalmers, Milwaukee 1, Wisconsin.

POWER FOR A GROWING WORLD

BH-151B

Circle 3 on Reader Service Card



SILENT HOIST KRANE KAR

360° BOOM SWING-Now... another addition to the famous family of Silent Hoist KRANE KAR... the original Mobile Swing Boom Crane! BOOM ROTATION: All-Hydraulic 360° continual rotation on heavy-duty double-race ball-bearing turntable. BOOM: 15/22 ft., manual or hydraulic telescoping. TRANSMISSION: Hydraulic power shift directional in combination with flywheel torque converter. STEERING: Full time power steering, finger-tip control. ENGINE: Heavy duty 6 cylinder value-in head type. BOOM TOPPING: Horizontal to highest vertical in only 8 seconds. BOOM HOISTING: Load block 3 parts of line 25 to 55 fpm. TIRES: Dual pneumatic tires on traction axle for high flotation and extra blow-out protection. TOTAL VISION AND SAFETY: No obstruction in any position of load or crane; operator fully protected through 360° rotation of boom. Write for complete details in illustrated bulletin #99.

180° BOOM SWING-The Standard widely favored All-Hydraulic or Mechanical 180° swing boom crane models. Lifts, carries, and places any load up to 12½ tons. One engine powers the machine for travel and all crane applications—finger-tip control. Front traction wheel drive supports chassis and crane load. 2 geared speeds for hoisting, topping, and swinging. No tail swing-Boom never passes over Operator's head. Write for complete details in illustrated bulletin \$79.



SILENT HOIST & CRANE CO. - BROOKLYN 20, N.Y.

Circle 151 on Reader Service Card

PRODUCT NEWS

charge. Flatbed with stake racks is 45" x 41". Rear seat removable for more space. Speeds: 15 mph forward, 6 mph reverse. Coil springs front and rear, shock absorbers on all springs.

Circle 320 on Reader Service Card

Level Control Fails Safe

Model L-400 electronic level control for use with powdery or granular products. Rotating paddle controls a



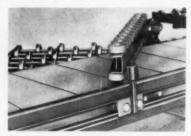
transistor circuit. Circuit operates relays and indicators. If any part of the instrument fails, system behaves as though material had come to predetermined level. Made for high-level or low-level fail-safe operation. Paddle shaft bends without breaking.

Flo-Tronics, Inc.

Circle 321 on Reader Service Card

Belt Resists Solvents, Corrosion

Armorbelt is made of smooth, zinccoated steel. The gap between slats doesn't exceed .015" even when go-



ing over sprockets. Conveyor lengths to 500 ft possible. Speedbar channel on both sides of conveyor permits

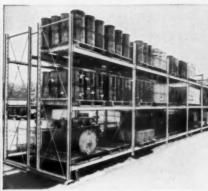
Continued on page 120

from the ground up...to as high as you need to go

American Slide-n-Lock adjustable STORAGE RACKS

give you the most for your storage dollar!





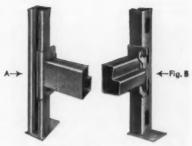


American Slide-n-Lock Adjustable Storage Rack installations at Brunswick Corporation Muskegon, Michigan, plant.

no storage rack but American offers all these features

- American Stringers are one-piece made of durable, continuous welded steel tubing, made from high carbon steel.
- 2 American Stringers have step construction for fast, simple conversion to decking — step is 1 1 1 deep — thickness of finished 2" lumber.
- American Posts are rugged made from extra heavy gage steel roll formed by special tooling.
- American has positive double-wedging lock safe-t-pin gives positive security against unhooking stringers.
- S American has smooth, aisle-side construction — no protrusions of any kind to tear clothes or create a safety hazard.

- American has higher safety factors — 2.25 to 1 — for greater protection to truck operators and merchandise.
- American Racks are easy to erect no costly bolting—all parts hook into place.
- American Racks are easy to adjust — all stringers can be moved independently of any other part.
- American Upright Frames are cross braced against sway — turnbuckles provide ready take-up for uneven floors.
- Fig. A—smooth line construction of aisle side of post and stringer eliminates hazardous protrusions. Stringers raise and lower like a window. Fig. B—note rigid connection when stringer is "locked" to post.



send for catalog

AMERICAN METAL PRODUCTS COMPANY

STORAGE RACK DIVISION

5961 Linsdale Ave. Detroit 4, Michigan

Manufactured in Canada by Sunshine-Waterloo Co., Ltd., Waterloo, Ontario

Circle 6 on Reader Service Card

STEEL WAREHOUSE "TAKES TO THE AIR"

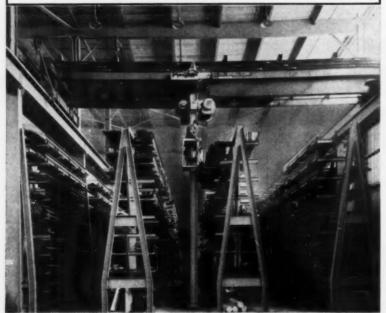


Fig. 1 — TRAK-RAK fork lift at top of column. lifting bundle of steel rod. Unit serves 3 long aisles of racks.

TRAK-RAK SYSTEM INCREASES STORAGE SPACE, SAVES 22% CAPITAL BUILDING INVESTMENT

When A. C. Leslie & Co. Limited, needed more storage area in its busy Toronto steel warehouse, it decided to "reach for the ceiling" with a Chicago Tramrail TRAK-RAK System of vertical storage and handling. As a result, the company estimates it not only saved 22% of projected capital building costs, but increased the overall efficiency and speed of the Toronto operation. The company expects to gain further economies as the TRAK-RAK system is used to its full extent.

A 5 ton capacity toprunning TRAK-

A 5 ton capacity toprunning TRAK-RAK Crane was installed in each of two 40 ft. wide bays to serve specially designed 18 ft. high material storage racks (Fig. 1). Each crane bridge has an overhead trolley, from which is suspended an electrically operated rotating column



Fig. 2 — Carriage equipped with 2 pairs of forks Operator is flopping outer forks up.

equipped with a special fork lift. All operations of the fork lift, which revolves to serve either side of the aisles, moves toward or away from the racks, and raises or lowers on the column, are controlled by the operator who rides with the carriage.

Two pairs of forks are mounted on the carriage. The outer forks may be flopped back (Fig. 2) leaving the inside forks in

position for handling palletized or crated material. For handling long boxes, bars, etc., the outside forks are flipped back into working position.

working position.

A TRAK-RAK feature which added to handling speed and insured safe operation was the safety interlock switch system which prevents the column from running



Fig. 3 — TRAK-RAK column requires minimum alsi space for operation.

into a rack and permits full rotation only when the unit is safely beyond the end of the racks.

The A. C. Leslie Company reports that a similar TRAK-RAK System installed in its Montreal warehouse permitted a 37% savings in capital building investment with equally good operating efficiency and economy.

For complete details on the TRAK-RAK System of vertical storage and handling, write the manufacturer:

CTC CHICAGO TRAMRAIL CORPORATION 13225 Kostner Avenue * Chicago 23, Ill.

Circle 47 on Reader Service Card

PRODUCT

fastening of side tables, deflectors, electric controls, other attachments. Speeds to 60 ft per min.; low power needs. Automatic takeup for heat expansion.

M-H Standard Corp.

Circle 322 on Reader Service Card

Rubber Doors Ease Impact

Trucks pass through Flex-A-Matic doors like a breeze, the makers say. Two-ply rubber doors give on impact;



won't harm truck or load. Outlast rigid doors. Hinges need little care. Doors are made to fit any opening; come with air seal, plexiglas win-

The Peele Co.

Circle 323 on Reader Service Card

KD Box Printer Saves Dry Time

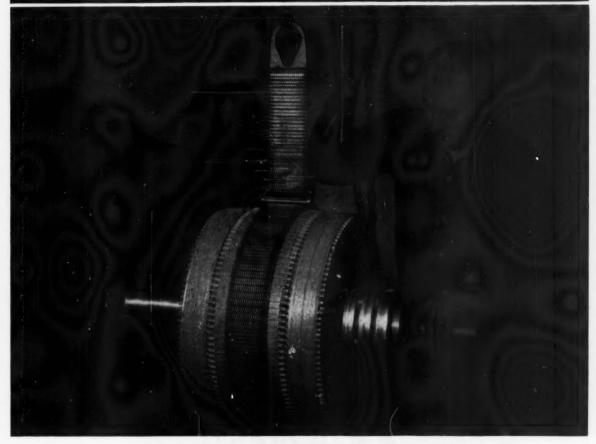
Prints knocked-down corrugated containers after manufacturer's joint is made. Model KDF is only half as



wide as a printer-slotter; uses fast drying ink. Boxes may be handled as they come off machine; can go directly to shipping dock. No floor space needed for drying. Machine feeds di-

Continued on page 122

GENTLENESS



Only GRIPPER Metal SLINGS

give you gentle load handling + 6 other benefits
Safety, Strength, Flexibility, Load Stability, Longer Life, Fast, Easy Rigging

Imagine one man with a single Gripper metalmesh Sling positioning a heavy motor armature without damaging delicate coils. That's fast, easy, gentle handling! The secret? The Gripper Sling's broad bearing surface that distributes the load over a wide area. There's no concentration of the load at one or two narrow points... no crushing action, even when handling thin-walled tubing.

For extremely delicate handling of polished stock ask about Gripper Slings with PVC or Neoprene coverings. And . . . pretested and guaranteed Gripper Slings are made in standard widths and lengths for loads up to 100,000 lbs.

Mail the coupon today for full information or a demonstration. Or, contact your nearest representative.

(ar	Dept. W, Cambridge 10, Md.
	Please send Gripper Sling catalog and my distributor's name.
	Please arrange a no-obligation demonstration.
NAME	TITLE
COMPANY_	
STREET	
CITY	ZONE STATE

Circle 36 on Reader Service Card

For Cost-Cutting EFFICIENCY in Any Handling Job... Choose BUSCHMAN CONVEYORS

PORTABLES . . . Gravity and Powered . . . Roller, Wheel, Belt

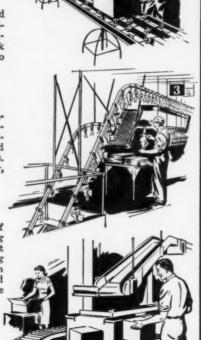
Every practical unit is included in the Buschman widely diversified portable line. Identical couplings both ends permit quick assembly of various types into efficient low-cost combinations.

CABLE . . . Overhead, Table, Power-Free

Adaptable to countless operations, they speed production, reduce costs. Universal cable trolley conveyors easily installed from standard, stocked units. Economical, smooth running, durable, efficient.

COMPLETELY ENGINEERED SYSTEMS

Buschman utilizes every type of conveyor necessary in planning individual systems to effect most economical, practical handling of materials. Using Buschman plans and their standard stocked parts, your own men can make installations.



Buschman engineering and equipment encompass the entire conveyor field. Our list of users reads like Who's Who in American Industry! This experience can help you write your earnings statement in larger figures. Tell us your problems; let us send pertinent literature and suggestions. The E. W. Buschman Company, 4450 Clifton Avenue, Cincinnati 32, Ohio.



Complete Conveyor Systems for all Industries—Engineered, Manufactured, Installed Representatives in Principal Cities

364

PRODUCT NEWS __

rectly from any box finishing equipment; prints in 1 color all panels on top side of container.

Bostitch, Inc., Container Machinery Div.

Circle 324 on Reader Service Card

Tank Shrinks To 12 Inches

This 800-gal Flex-Drum shipping container for dry or liquid bulk commodities collapses like an accordion into a 12-in high self-storing unit. Thin, disposable plastic liners elimi-



nate need for cleaning; make same container usable for different products. There's no danger of contamination. Three sizes: 250, 500, and 800 gal. Tares range from 106 to 120 lb; heights from 40 to 106 in. All have 47-in diam, collapse to 12 in. Highway Trailer Industries, Inc.

Circle 325 on Reader Service Card

Straddle Carrier Lifts High



Series 121 High-Lift carrier totes 60,000 lb, lifts it 48 in. off ground. High lift design enables carrier to tier loads 2 or 3 high. Especially

Continued on page 124

JUDGE THESE CASES of Monarch Solids

Here are the facts:

The following are typical field reports on test installations in which conventional solid tires had been failing prematurely.

Case #3

ALUMINUM RESMELTING PLANT

PROBLEM: In normal operation, standard solids were failing in two months because of rim separation.

CONDITION: Floor littered with sharp aluminum scrap, chips and shavings.

TEST RESULTS: New Monarchs with Monolok bond ran six months . . . 200% longer . . . and were replaced after normal rough wear. Bonds did not fail in spite of heavy scrap embedded in tread and piercing base band.

Case #8

TANNERY

PROBLEM: Original equipment solids failed in two months: rim separation.

CONDITION: Floors covered with salt brine and sulphuric acid.

TEST RESULTS: Monolok bonded tires have been in operation seven months . . . a 250% improvement to date . . . and still are running satisfactorily.

Case #21

COAL MINE (Bore Operation)

PROBLEM: Standard solids failed in six months because of chipping at outside base and subsequent separation.

CONDITION: Rough surfaces + overloads.

TEST RESULTS: Twelve Monarchs with the Monolok bond already have lasted eleven months
. . . 83% longer . . . and still are in satisfactory condition.

"Monolok" is Monarch's trade-name for a new chemical process that creates the most durable rubber-to-metal bond available to date.



Premature Rim Separation



The most universal type of failure experienced with industrial solid tires . . . premature rim separation . . . frequently is caused by embedded metal scrap, chemicals or excessive heat. And because these factors destroy the rubber-to-metal bond, they cause severe tire damage (and high replacement costs) under normal operating conditions.

MONARCH engineers have succeeded in solving this serious problem by combining an advanced bonding process with an improved, extra tough, natural rubber stock . . . Compound T-5100. Result: MONARCH tires now feature unprecedented resistance to rim separation caused by the above factors.

Verdict: NEW "MONOLOK"* PROCESS
CAN CUT YOUR TIRE REPLACEMENT COSTS!

See your Monarch dealer or write direct for BULLETIN MR-457.



THE MONARCH
RUBBER COMPANY
210 LINCOLN PARK
HARTVILLE, OHIO

- 7-225 General Motors Bldg., Detroit, Mich.
- 2353 No. California Ave., Chicago, III.
- Western Worehouse: Reno, Nevada

8014-MR

Circle 118 on Reader Service Card



HEAVY-DUTY "80" sweeps an ultra-clean 53-inch path, nimbly turns in a short 65" radius.

How the "aisle-designed" Tennant "80"

sweeps clean, operates easily and slashes your sweeping costs

Compact "aisle-design" of Tennant's heavyduty Model 80 gives you maximum sweeping capacity with a machine of minimum size. It whisks through aisles as narrow as 56 inches . . . sweeps wider aisles up to $8\frac{1}{2}$ feet in one round trip!

Sweeps EXTRA clean. Leaves an ultra-clean 53-inch path (with side brush) even on rough floors. Picks up both bulky soilage and fine dust in a single fast pass. Powerful brush-and-vacuum system provides most nearly perfect dust-free sweeping ever developed.

Easy to use. Sweeps on-the-run . . . drives like a car. Starts, stops, reverses instantly with heel-and-toe controls. Operator simply presses lever to dump loads up to 800 lbs. Heavy duty one-piece main brush changes in 5 minutes.

Cuts sweeping costs. The man-hours it can save will amaze you! Sweeps over 100,000 sq. ft. per hour in open areas at a fraction of hand-sweeping costs. Does as much work as up to 15 men with brooms ... while doing a far better job.

WRITE TODAY for illustrated bulletins. G. H. TENNANT COMPANY, 707L North Lilac Drive, Minneapolis 22, Minnesota.



YOUR CHOICE of three models . . . LPgas (here sweeping a tunnel in one fast round trip), gasoline (top photo), or the popular new electric Model 80-E (below).



WHISPER-QUIET, battery-power "80-E" sweeps extra-clean in critical areas where fumes and noise are objectionable.



Industry's Most Widely Used

POWER SWEEPERS

SPECIALIZED MAINTENANCE EQUIPMENT

Circle 161 on Reader Service Card

PRODUCT

suited for steel mill, foundry and heavy construction. Load hooks raised and lowered by 4 equalized hydraulic cylinders. Max loaded speed: 22.2 mph. Carriers built to order for variety of load sizes and applications.

Clark Equipment Co.

Circle 326 on Reader Service Card

Address, Mark In Hurry

Touch Stenciling marking kit offered for sale or free trial by maker. Kit includes a handprinter with metal



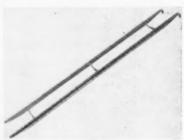
stand, 25 stencils, 4 oz of fadeproofwaterproof ink (enough for 30,000 impressions), stylus, instructions. With it you mark directly on the shipping carton. One stencil, prepared with office paperwork, is all that's needed to address and mark an entire shipment. It's fast, inexpensive.

Weber Marking Systems, Inc.

Circle 327 on Reader Service Card

Barrel And Box Skid

Use one of these all-steel skids and you'll never be without it, says the



maker. It's much lighter in weight, easier to handle than wooden ones. All-steel, all-welded construction. Three lengths: 8', 10', 12'; 14" wide. Palmer-Shile Co.

Circle 328 on Reader Service Card

Automated Carton Stapler

Fully automatic dual head stapler closes at the same time top and bot-

Continued on page 126

MATERIAL HANDLING ENGINEERING



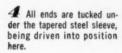
Here, our splicer has separated the rope to desired loop size. (Note white mark on rope, above vise; and another above left hand.)

2 Now the sets of strands are being laid over each other to form loop — Three in one direction, the other three and I.W.R.C. in the other.



3 The loop sleeve is in p — has a strencess of the rather sling, as an insurance."

The loop – before the sleeve is in place or swaged – has a strength well in excess of the rated capacity of the sling, as an added "safety insurance."





Up to 1500 tons of pressure are applied to the sleeve, permanently securing sleeve and strand ends, to complete operation.



$now\ you\ can\ show\ your\ safety\ man\ why\ Roebling All-Purpose Slings\ are\ TWICE\ as\ safe$

The first large measure of safety is in the rolled loop splice, the second safety measure is in the swaged steel sleeve. These great weight lifters go by the name of Roebling Ali-Purpose Slings or, if you prefer, "Safety Plus." They are made in a variety of diameters, lengths and types and all of them develop the full catalog strength of the rope. To really be on the safe side, why don't you ask us

for our brochure on Roebling "Safety Plus" Slings? Just say, "A-944" and it shall be sent to you promptly.

You can get Roebling All-Purpose Slings—as well as Grommet, Cable Laid, Flatweave, 8-Part Braided and other special slings—from your nearby Roebling Distributor or Roebling's Wire Rope Division, Trenton 2, New Jersey.

ROEBLING

Branch Offices in Principal Cities John A. Roebling's Sons Division The Colorado Fuel and Iron Corporation



(Advertisement)

NEW PRODUCTS

FLAT STRAPPING



Medel 00-1915 — Save up to 15% with this mobile unit that includes everything needed to strap anywhere in your plant. Write: A. J. Gerrard, 402 East Touhy Avenue, Des Plaines, Illinois,

Circle 22 on Reader Service Card

TRANSPARENT, VINYL REINFORCED TAPE



Pressure sensitive tape with exceptional strength, high adhesion, superior elongation. Ideal where shock is great, on rough edges, or where necessary to read under tape. Write: A. J. Gerrard, 402 East Touhy Avenue, Des Plaines, Illinois.

Circle 23 on Reader Service Card

STRAP CUTTER

Model 550 — Cuts strap to 2" x .050 with less effort. Legs on lower handle provide extra stability. Long handles give greater operator safety. Write: A. J. Gerrard, 402 East Touhy Avenue, Des Plaines, Illinois.

Circle 24 on Reader Service Card



DIAL-A-BAND DISPENSER

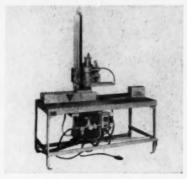
Model 430 — Set the dial and press a button new dispenser automatically feeds and cuts exact length and number of straps needed. Write A.

J. Gerrard, 402 East Touhy Avenue, Des Plaines, Illinois.

Circle 25 on Reader Service Card

PRODUCT NEWS

tom of corrugated box. Feeds from accumulator, closes top flaps, drives and clinches staples, moves carton to

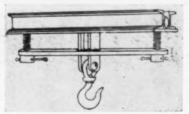


discharge conveyor. Handles 500 per hour. Uses semi-flat stapling clips and forming dies; takes staples 5,000 per load.

International Staple & Machine Co.
Circle 329 on Reader Service Card

Lift Hook For Forks

Line of hook attachments for speedy conversion of fork lift trucks



to overhead hook lifts. It slides over the forks. Self aligning clamp locks it in place without use of tools. Capacities: 3, 6, 9 tons. Larger ones built to order.

Frederick T. Apted Co.
Circle 330 on Reader Service Card

Simplified Web Printer

900-H Rolaprinter mounts on any machine handling a continuous web or sheet. Prints on linoleum, paper,



metal, plastic, fabric in any color including white and yellow. Uses fastdry inks. No skill to set up, no attention during printing. Drive from



Here's a surer, easier way to specify

DARNELL

CASTERS . WHEELS



1 RUBBER TREADS

treeds suited to all types of floors, including Darnelloprene oil, water and chemicalresistant treeds, make Darnell Casters and Wheels highly advanced to results usess.

2 RUST-PROOFED

. . . by sinc ploting. Dernell Custers give longer, care-free life wherever water, steam and corroding chemicals are freely used.

3 STRING GUARDS

and revolings may wind around the lab, these string guards insure easy rolling at all times.

4 LUBRICATION

all swivel and whee bearings are factory packed with a high quality grease that "stands up" under attack by hear and water. Zerk fittings are recorded for mark pressure any interpreta-



DARNELL CORPORATION, LTD.

DOWNEY (Los Angeles County) CALIF. 37-28 SIXTY-FIRST, WOODSIDE 77, L.I., N.Y. 36 NORTH CLINTON ST., CHICAGO 6, ILL. 1000 PEACHTREE N. E., ATLANTA, GA.

Circle 49 on Reader Service Card
MATERIAL HANDLING ENGINEERING

parent machine or friction contact with material. Takes cylinders with 11" to 30" circumference. Do-it-yourself installation.

Adolph Gottscho, Inc.

Circle 331 on Reader Service Card

Unit Container Crane

Dockmaster tower-type crane moves containers directly between ships and rail cars, or truck trailers. A bridge type structure is available for loca-



tions where containers move between ships and dock-side storage. Both are travelling, man-trolley machines for high-speed handling. Available for all standard container sizes. Operator always directly above load for quick, accurate positioning.

Dravo Corp.

Circle 332 on Reader Service Card

3-Wheeler From Hand Truck

Truxaid universal hand truck attachment has rigid adjustable and retractable tripod support. Makes 3wheeled unit from regular hand truck. Finger pressure on adjusting lock



arm raises, lowers tripod support to transport load at any angle. There's no balancing or struggle on inclines. Sierra Mechanical Products Co.

Circle 333 on Reader Service Card

Air Gun Subs For Steamer

Trig-Away power cleaning gun uses compressed air and water-soluble, non-caustic grease emulsifier. Replaces steam cleaning. Air jet in gun picks up small amount of solvent, blasts it into grease and dirt. Then gun cleans surface with warm or

Continued on page 128

HIGHLY maneuverable LOW

featured in proven



electric trucks

ONE OF TWO HUSTLER ASSEMBLY LINES

Nelfred's main plant is modern, well lighted and equipped throughout its frabrication department, machine shop, steek rooms, and assembly department. It sapples quality, and it produces quality, Ample capacity to produce a full line of twenty-sight (28) different models of rider-type electric lift treats.

STANDARD CORRUGATED CASE CO. New Jersey

Hustler Brute BTL Series — 2000, 3000, and 4000 pound ca-pacities on 24" L.C. A stand-up model, ideal for narrow aisle op-cration-dock work, fast on and off operations. The Brute has the smallest terning radius of any fork lift in its field.





NEW MODEL

The Hustler Center Stand-up FCL eries — 1000, 2000, 3000, and 000 pound capacities on 24" L.C. esigned for exceptional stability and to increase efficiency where constant on and off handling operation is required.



THE MENTHOLATUM CORPORATION

Hustler Standard STL Series - 1000, Hastler Standard STL Series — 1000, 2000, 3000, and 4000 pound capacities on 24" L.C. This is an all purpose model. The extended frame permits lower floor rating, making it ideal for locations where low capacity elevators and rough flooring make træcking difficult, Very low seating allows træck van loading without removing overhead suards.



FROM AKRON COCA-COLA FLEET

The Hastler "Pag" PTL Series — 1000, 2000, 3000, and 4000 pound capacities on 24" L.C. An extremely versatile model, designed to deliver all the benefits of a complete sit-down fork lift but requires only a working space and turning radius of many walk-around types. The Pag has the smallest turning radius of any fork lift in its capacities! Ideal for eramped and crowded conditions. Pays dividends by freeing more aisle space for productive area.



FUTORIAN-STRATFORD FURNITURE HANDLING Tennessee

Palletiess Handling with Hustier Equipment

Clamps, - raises, - revolves, - side shifts

This type of attachment has greatly increased speed of handling for many operations. Full line of attachments available for all Hustier model trucks to fit your needs.



FROM THE BUTLER PENN MINE FLEET

Hustler Outdoorsman 36-HOD Hastler Outdoorsman 36-000
and HOS Series — 3000, 4000,
and 5000 pound capacities on 24"
L.C. (SINGLE OR DUAL PREUMATIC TIRED), this track makes
it possible to operate fail shifts
indoor or outdoor over all types of
terrain. An exceptional, groven
track with rocking foot pedal control and torsion has expension.
Power for ramps through 15%. Has
carbon pile and power stering optionals. The Brix traly pneumatic
tired electric track.

28 STANDARD RIDER TYPE LIFT TRUCK MODELS AVAILABLE or we will engineer and manufacture special handling equipment to your specifications.

THE HEIFRED CORP 37877 ELM ST. . WILLOUGHBY, OHIO

PHONE: WHitehall 2-8150

Established Sales & Service in all principal cities. Lease and lease purchase plans available.

OWN A HEIFRED LIFT TRUCK FOR APP. \$80 PER MONTH

Circle 90 on Reader Service Card



expert but...

"I found one way of saving my company a fabulous amount of money!

I started ordering our shipping labels from Ever Ready, where you get a 'quality' job at a low, low price—because Ever Ready is one of the largest and most experienced label producers in the country."

Ever Ready's tremendous volume, twice that of most other label printers, means lower costs for us—lower prices for you.

Ever Ready's shipping labels are easy to order by mail. If you use 6000 or more shipping or mailing labels per year you'll find amazing savings with Ever Ready. Just mail this coupon for our helpful brochure.

EVER READY LABEL CORPORATION 357 Cortlandt Street . . . Ballevilla 9. N. J.

						-0110			*** 4.
Please	send	me	the	Spot	Car	bon	Labe	el fo	ider.
Please	send	me	bro	chure	on	mai	ling	and	ship-

bing iancis.
Name
Company
Street Address

PRODUCT

cold water spray. Plain air jet dries the surface. Engines may be started



at once. Cleaning concentrate won't damage wiring, engines, paint, maker savs.

Bonus Products Mfg. Circle 334 on Reader Service Card

Ball Transfer Unit

New line of table mounted transfer units provides means to hand



transfer packages between conveyor lines or machines. Ball-caster spacing; 2, 3, or 4 inches. Tables can be furnished with angle or channel framing to order. Supports furnished as required.

Conveyor Specialty Co., Inc. Circle 335 on Reader Service Card

High Ladder Stock Picker

Combines utility and safety in maintenance and stock picking. Model S-7FB ladder truck has all aluminum



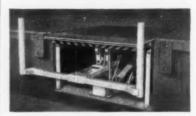
alloy flat bed. Ladder is 66 in high with extension tray for work to 12 ft

CHOOSE THE GLOBE Trans-O-Matic RAMP THAT FILLS YOUR BILL



MANUALLY-OPERATED

The newest Globe Ramp. Unique hinged lip solves up-to-the-edge loading problems, interrupted loading, permits trucks to park overnight against Ramp without moving. When not in use, lip automatically "flips" down, locking securely to support heavy cross-over traffic. Fast and safe to use; inexpensive to install.



▶ TRUCK-OPERATED

Completely automatic. When truck backs in, Ramp is actuated to form a fast, safe bridge to loading platform. As truck pulls out, Ramp returns to dock level and automatically locks in place. Ruggedly built to withstand tough treatment.



▶ POWER-OPERATED

Air-oil or electric-powered Globe Ramps help start efficient loading dock operations immediately. Sturdy platform joins carrier bed to dock regardless of differences in level. Easy, above-ground installation.

• WRITE TODAY

for details on the Globe Trans-O-Matic Ramp that can help you speed your materials handling. Globe Hoist Company. East Mermaid Lane at Queen Street, Philadelphia 18, Pa.

GLOBE ...

PLANTS: PHILADELPHIA—LONG BEACH, CALIF.

high. Safety approved spring-loaded ladder locks to floor under operator's weight; retracts when weight is removed. Capacity: 2,000 lb. Weighs 130 lb.

Rol-Away Truck Mfg. Co.
Circle 336 on Reader Service Card

Another Cat In Line

Third in maker's wheeled line is 922 Traxcavator, with 80 net hp. It has 14 cu yd bucket capacity; a gasoline or diesel engine. Prime feature is open, easily accessible operator's



compartment with all of loader mechanism completely ahead of it. Max lift: 12'-2". Dump reach: 26". Breakout force: 13,700 lb. Many other features

Caterpillar Tractor Co.
Circle 337 on Reader Service Card

Different Bag Construction

Poly-Ply Multiwall bags feature structure that has a separate, intermediate ply. It isn't a liner, according to the maker. The ply is made of



light-weight sheet polyethylene, spotpasted top and bottom to layers of heavy duty kraft paper that shield it. The film is not next to the product; is protected from abrasion, other injury. Bag was originally developed for shipping salt.

Chase Bag Co.
Circle 338 on Reader Service Card

Cart Lasts Longer

Longer cart life and less road damage are claimed for improved Cargo Carts. They're for manual use or drag lines. A 3/16" steel channel runs entire length of platform through the center of it for safety factor against

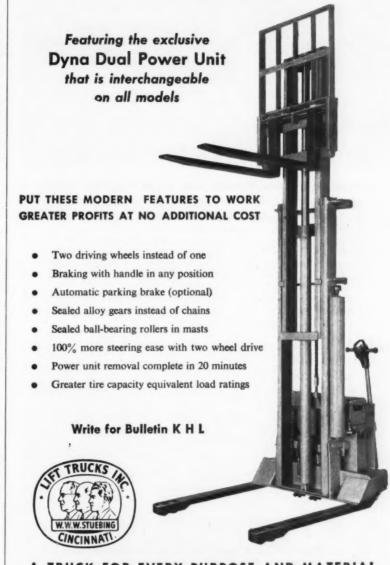
Continued on page 130

MODERNIZE with

America's most Modern Truck . . .

Hydro Lectric

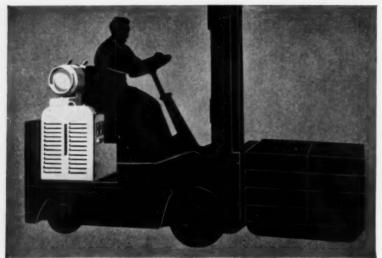
A GREAT NAME IN LIFT TRUCKS



A TRUCK FOR EVERY PURPOSE AND MATERIAL



Circle 102 on Reader Service Card



LP-Gas Model HA-3 with recessed housing can be installed on sit-down trucks without seat alteration.

Ready-Power Units Power Trucks At Lowest Cost Per Ton-Mile

ASSURE FULL-TIME POWER FOR YOUR ELECTRIC TRUCK

It costs you less to move materials when your electric truck is equipped with Ready-Power. The compact Ready-Power Unit consists of a dependable industrial engine and DC generator. It is easily installed or interchanged on practically any make of truck and generates full capacity power whenever needed. There is no power lag, no truck slow-down. Ready-Power also eliminates the constant recharging and replacement of stored power.

Save money and assure full-time power for your materials handling vehicles. Mail the coupon below for complete

information on Ready-Power Units.

SERIES HA FOR FORKS UP TO 8,000 LBS., PLATFORMS UP TO 10,000 LBS.



Ready-Power Series HA Units are designed for use with medium size fork, platform and crane trucks. They are available with gasoline or LP-Gas fueling systems, with conventional housing for stand-up trucks or recessed housing for sitdown trucks.



READY-POWER

PREE I	ECHNICAL
BULLET	IIN
99A	READY-POWER
Mail this	POWER THAT PATE

The Ready-Power Company 3838 Grand River Avenue Detroit 8, Michigan

Name			
Company			
Address			
City	Zone	State	

Circle 135 on Reader Service Card

PRODUCT NEWS

overloading, abuse, shock loads. Platform frame extends beyond the rack, prevents damage to rack. Rack handle



can't damage loads when a cart pushes another in a drag line. Many hitch options; 6" or 7" demountable rubber tired wheels.

Nutting Truck And Caster Co.
Circle 339 on Reader Service Card

Lifts Cement 65 Ft

Air Caddy unloads 1,000 lb per min from railroad hopper cars. It moves cement from storage bins to



batch bin. There's no spillage and no undertrack receiving pit is necessary. Gas or electric drive. One man can service it, and he's free for other jobs around the plant.

Ripco Air Systems

Circle 340 on Reader Service Card

2 Vacuum Pads Lift Plate

Self-contained, 110-volt vacuum Powerpac lifts and handles steel plate, other nonporous materials in vertical



or horizontal position. Attaches to crane or hoist by lifting bails. Two 14" pads on removable beam have 1350 lb capacity. Vacuum reserve system safely holds material even if power fails. Instantaneous vacuum on-off controlled manually.

Vac-U-Lift Co.

Circle 341 on Reader Service Card

Lightweight, It Vibrates

BD-10 Vibrolator weighs only 4½ oz, handles 4 cu ft bins. Use it to bring powdered, particulate, or granular materials out of hoppers and down chutes. Operation is silent. Air operated: consumption is 3 cu ft per min. Vibration generated by rolling



ball driven in an orbit on replaceable raceways. Safe in explosive atmospheres and high temps.

Circle 342 on Reader Service Card

Martin Engineering Co.

Tow Pin Won't Catch Feet

Tow pin for in-floor tow conveyor systems is specially designed to be out of way of operator's feet. Pin is in line with caster wheels to avoid damage when truck goes over ramps. Depth adjustment positive, can't



change accidently. Lifter sets to any height; exerts positive pressure up and down. Hardened pin turns freely in holder, spreads wear evenly.

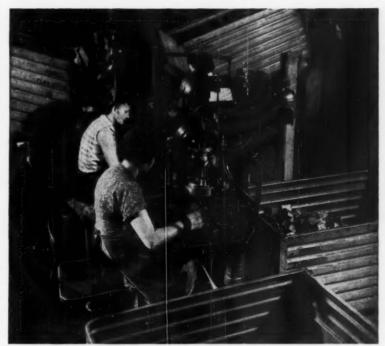
Midland Equip. Div.

Circle 343 on Reader Service Card

Clean Cushioning Material

Try Zylex 6 where particles of dust or lint from packing and shipping affect your product adversely. It's noncellular, cushions on heat-formed cylinders—1,000 of them per sq ft. Each

Continued on page 132

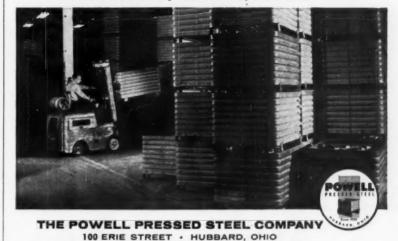


Powell's FLOW-MATIC materials handling system in action at Steel City Electric Co., Pittsburgh, Pa.

Gained... 45% in floor space ... 30% in handling time by POWELL'S *Flow-Matic**

Steel City Electric Company has realized 45% more floor space for storage of process material and 30% in material handling on electrical parts production lines—with Powell's unique FLOW-MATIC* materials handling system. Other cost-minded companies have gained as much as 50% in handling time with FLOW-MATIC*. You can too! Why not investigate?

Powell's unique FLOW-MATIC boxes stack easily and neatly in a minimum of floor space at Steel City Electric Co.



The most complete line of material handling equipment.

Circle 131 on Reader Service Card



weigh only 625 lbs. Provide 400 SCFM continuous air flow

M-D answers the need for lightweight pneumatic units for vacuum or high pressure systems. Only 625 lbs. total weight of blower and engine. Dependable M-D units generate 15 PSIG of continuous air flow or up to 18 PSIG in surges. Ideal for mobile applications. M-D muffler packs mean quiet operation.

M-D blowers operate at wider pressure and speed ranges than any other rotary positive blower. Capacities of 22 production models range from 50 to 4,000 CFM, pressures to 15 PSIG single, 70 PSIG multi-stage.



For full information write

M-D BLOWERS, INC., RACINE, WISCONSIN

A SUBSIDIARY OF



MIEHLE-GOSS-DEXTER, INC.

PRODUCT NEWS

cylinder is an independent, resilient spring, says the maker. Material is non-abrasive, non-corrosive. It won't form dust or lint, won't absorb water. Tensile strength is high, heat sealing easy. Resists acids, alkalies, organics. Compression set after packing and in transit is low.

> Preservation Packaging, Inc. Circle 344 on Reader Service Card

Uses Less Strapping

Model TH tensioner takes strapping directly from the coil. Said to save a foot of strap every time it's used. It's fast, has a self-energized feed



wheel that holds high tension. Uses any type seal. Seal can be placed ahead or behind tensioner. Takes strap from %" to 1%"

Signode Steel Strapping Co. Circle 345 on Reader Service Card

Weighs, Stamps Cartons

Fits into conveyor line. Weighs carton, automatically prints weight on it. Can be furnished with conveyors,



walking beams, other devices to transfer carton from load station, to scale, to stamper, etc. Handles 600 units per hour.

Wilson Automation Co. Circle 346 on Reader Service Card

Paper Conveyor Speeds Office Work

Compact V-belt, less than 3" wide, carries documents upright between 2 aluminum channels. Any number of lanes may be installed side by side in minimum space. Reduces employee time away from desk; mail clerks and routing baskets not necessary. Will



run in opposite directions with stops or outlets anywhere desired. Quiet; moving parts enclosed or protected. A. J. Bayer Co.

Circle 347 on Reader Service Card

Self-Cleaning Drive Pulley

For conveyor belt drives. Turn-Clean wing pulley is rubber lagged. Edge of the wing is U-shaped channel with a steel encased, high tensile



rubber bar. Bar compresses on contact with the belt, spills off material on belt underside. There's no buildup to score and wear belt. Traction to belt said to be excellent.

Van Gorp Mfg., Inc.

Circle 348 on Reader Service Card

Compact, Portable Conveyor

Mentor-Veyors come in 5 ft lengths, butt end-to-end for any kind



of layout. They angle around corners, operate over rough and irregular sur-Continued on page 134

Strongest

for greater capacity

Strongest

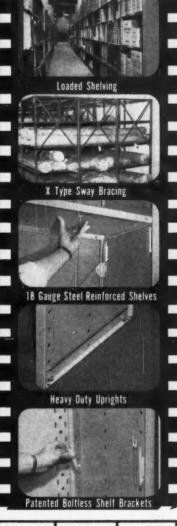
for longer life

Strongest

for more protection

Strongest

for lasting appearance



DELUXE

STEEL SHELVING

strongest

because . . .

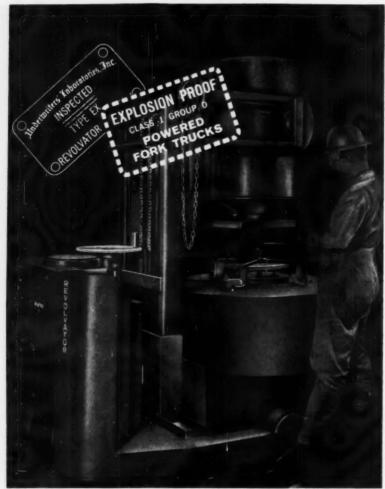
. . . it is made of 18 gauge steel, and has both side and back cross-bracing. Factory embedded reinforcing in the shelves prevents damage under large or concentrated loads; one piece bin type uprights give you strength where needed.

The film strip shows 5 engineered features of Deluxe steel shelving that contribute to its strength and durability. In addition, Deluxe steel shelving, with patented boltless shelf brackets, is fast to assemble, fast to rearrange. Call your local Deluxe dealer for details or write us for the new Deluxe Shelving Catalog #284.

ROYAL METAL MANUFACTURING COMPANY

DELUXE METAL PRODUCTS DIVISION • 1 PARK AVE., NEW YORK 16

Circle 50 on Reader Service Card



GO-GETTER CUTS COSTS IN HALF; MAKES JOB SAFER

A leading chemical plant faced with the double explosion hazard of ethylbenzene fumes and aluminum chloride dust, solved its material handling problems — and saved money in the process — through the use of Revolvator's new fork lift trucks labeled Type Ex by Underwriters' Laboratories for Class 1 Group D explosion hazardous areas.

Previously, two men with a hand truck were required for this operation. Since the introduction of the Explosion Proof Go-Getter, one operator easily charges the hoppers in a safe manner with a minimum effort. "What used to be a dangerous, disagreeable job has now become a simple task," says the plant manager.

The explosion proof Go-Getter, available in 12 standard models, is but the latest development in Revolvator's better than a half century of experience in materials handling equipment covering standard walkie lift trucks, hand lift trucks, portable elevators and related equipment.

REVOLVATOR CO.

8739 TONNELE AVENUE, NORTH BERGEN, N. J. SINCE 1904

Circle 137 on Reader Service Card

PRODUCT

faces in tight places. You can modify layout without disassembly of sections. Each section has a steel frame and sheet metal belt-channels on angle iron legs. Easily adapt to any type of power.

Mentor Products, Inc.

Circle 349 on Reader Service Card

Lightweight Power & Free System

Rotorail uses rotating screw to move loads. You change screw pitch to vary speed; eliminate thread for stop stations. There's no return loop, few



moving parts. Simple hook-type hangers may be placed on system at any point. Standard components for rapid do-it-yourself installation. System altered or extended fast. Nylon bearings need no lubrication.

Philips & Davies, Inc.

Circle 350 on Reader Service Card

Mark Aisles, Paint Stripes

Friction-driven, noiseless; needs no gas or electric motor. One-man operation. Paint flow positively con-



trolled; there are no valves or nozzles to clog. Cleans easily; stores in little space. Rollers interchange. Sizes from 1" to 4" wide. Paints straight lines, circles, curves; will mark on turf or earth.

R. E. Muncy, Inc.

Circle 351 on Reader Service Card

MATERIAL HANDLING ENGINEERING

Snow Plow Attaches

Fits maker's F-10 platform truck. Fifty-inch blade raises easily for good travel clearance; no changeover delays. Plow said to perform equally well in wet or dry snow. Eliminates



cost of special snow removal equipment. Lateral arms absorb side thrust. Prime-Mover Co.

Circle 352 on Reader Service Card

Converts From Solid To Liquid Carrier

Pneumatically-discharging tank transport works year-around. Special design allows conversion back and forth between pulverized materials like dry cement, fly ash, and lime to fuel oils and low pressure liquids.

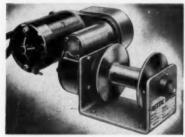


Two men make the change in 6 hours. Powder material discharges through flexible hose at 5 barrels per min; delivery range efficient to 250 ft from transport.

Delta Tank Mfg. Co., Inc. Circle 353 on Reader Service Card

Hoist Runs On Batteries

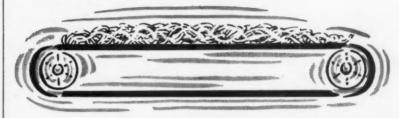
Portable hoist, rated % ton, operates from power supplied by 6-, 12-, or 24-volt batteries. Runs in either direction, locks automatically because of



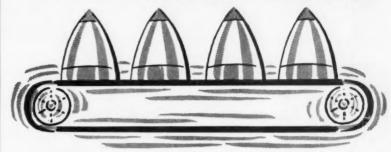
worm-gear drive. Made from cast aluminum. Mounts on trucks, trailers. Beebe Bros.

Circle 354 on Reader Service Card

FROM NOODLES



... TO NOSE CONES



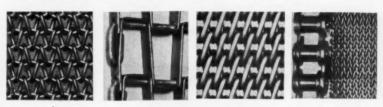
You can depend on

ASHWORTH METAL PROCESS BELTS to carry the load

Regardless of size or delicacy of handling required during process, there is an Ashworth Metal Process Belt that will convey your product safely, economically through its various processing operations.

There is an Ashworth Metal Process Belt to meet every requirement of continuous product flow... whether that product be animal, mineral or vegetable... whether it must be conveyed up hill, straight away or around corners. Chances are your need can be met with a standard Ashworth design; but, where analysis of service requirements indicate special design for specific application, Ashworth Engineers will "job-engineer" the correct belt for that job.

Engineering versatility plus the finest plant facilities in the industry insure quality woven into every Ashworth Belt.





Write direct for technical literature covering the complete family of Ashworth Belts. No obligation, of course.

ASHWORTH BROS., INC.

WINCHESTER, VIRGINIA Sales Offices in Principal Cities

Circle 8 on Reader Service Card

BULLETINS CATALOGS FILMS

Industrial And Commercial Steel Shelving



Catalog 2400, 36-pages, describes the company's complete line. It gives full information on boltless T-line shelving, angle shelving, tool storage inserts, drawer case units, bin units, custom shelving arrangements, and truck shelving. Also included is a section on Penco steel lockers, storage cabinets, and bookcase shelving. Typical applications are discussed to aid you select the most suitable type of shelving for an eco-

nomical, efficient installation. Specifications for each type of shelving are listed, along with tables of dimensions and capacities. Shelving units are illustrated either by photographs or drawings. Over 130 photographs are included.

Penco Division. Alan Wood Steel Co.

Circle 401 on Reader Service Card

50% Reduction In Handling Time

Job Study No. 192 completed recently at the Quackenbush Warehouse Co., of Scranton, Pa., discloses that extensive use of Towmotor fork lift trucks in all phases of warehousing has drastically cut operating costs. Savings include a 50% reduction in handling time, a one-third increase of usable warehouse space, and a 10% cut in overtime labor. Literature gives full details.

Towmotor Corporation

Circle 402 on Reader Service Card

Revised Conveyor Catalog

Catalog GC-1 is indexed for easy reference. New products and techniques are included. New sections cover APC (Adjustable Pressure Conveyor) wheel and live roller models and Rapisteel slotted angle construction material. More than 150 photographs are included in the 44-page catalog, illustrating products, applications, and facilities of the company.

The Rapids-Standard Co., Inc.
Circle 403 on Reader Service Card

Looking For Maneuverability?

The Hustler Standard (STL Series) electric fork truck comes in 1,000, 2,000, 3,000, and 4,000 pound capacities on 24-inch load center. The extended frame permits lower floor rating. Company points out that this makes it ideal for locations where low capacity elevators and rough flooring make trucking difficult. Literature shows the complete company line, lists specifications, and gives overall op-

erational features. Optional equipment available is also listed.

The Heifred Corp.

Circle 404 on Reader Service Card

Source Book for Marketing

Just off the press is an 8-page catalog on the complete IME line of marking, dating, coding, and imprinting machines. These machines can imprint any message on virtually all kinds of packages. Also many specially designed for specific problems.

Industrial Marking Equipment Co.

Circle 405 on Reader Service Card

"Techniques Of Plant Maintenance And Engineering—1960"

Now available is the 11th volume of the annual series. It is the report of the Plant Maintenance and Engineering Conference held earlier this year in Philadelphia.

The issue concentrates on the advance of automation from research and experiment to reality, and on the significance of automation in maintenance operations.

Nearly 2,000 practical, everyday problems are discussed and analyzed. Corrective solutions are suggested. There are 883 questions answered in the sessions where papers were presented, and more than 1,000 in ten roundtable discussions. Ninety-seven tables, charts, graphs, and diagrams are reproduced. The 34 papers presented at the 1960 conference are reprinted in full.

Roundtables include chemical plants, food processing plants, foundries, metalworking and metal fabricating plants, petroleum processing plants, pulp and paper mills, research development and pilot plants, rubber mills, rubber products plants, steel mills, and textile mills.

Largest volume in the 11-year series, the 341-page book is priced at \$10 postpaid from Clapp & Poliak, Inc., 341 Madison avenue, New York 17, N.Y.

Circle 406 on Reader Service Card

Hydraulic Dumper

Two-page brochure covers company's new hydraulic drop-bottom box dumper. It fits any make and model lift

Continued on page 138

TAPEnology...Industry's newest cost-cutting tool!

New automatic Pallet Loader uses TAPE to safely unitize cartons in seconds!

This new automatic Pallet Loader, developed by Lathrop-Paulson Co., Chicago, now permits stacking and palletizing of shipping cases and cartons at a rate of 15—30 per minute. What's more, to assure maximum load stability without necessity of interlocking the stack pattern, it automatically unitizes the top layer of each pallet with a single band of super-strong "Scotch" Brand Filament Tape.

Tight-holding "SCOTCH" BRAND Filament Tape sticks at a touch; unwinds easily for automatic application; holds firmly with a strength of up to 500 lbs. per inch of tape width. And tape won't cut into or damage

cartons; is easily disposed of when no longer needed.

What do you ship? "SCOTCH" BRAND Filament Tape offers dozens of time and cost-saving shortcuts in holding, bundling, carton reinforcing and unitizing. Ask your "SCOTCH" BRAND Tape Distributor for more information, or write: 3M Co., 900 Bush Ave., St. Paul 6, Minn., Dept. IAG-100.

When tape costs so little, why take less than...

SCOTCH BRAND

"SCOTCH" IS A REGISTERED TRADEMARK OF 3M CO., ST. PAUL 6, MINN

MINNESOTA MINING AND MANUFACTURING COMPANY ... WHERE RESEARCH IS THE KEY TO TOMOR



Circle 116 on Reader Service Card

Circle 100 on Reader Service Card

LEWIS TOTE PANS

STRONG

One-piece fiberglass molded construction; can't rust, rot, dent or bend. Stack-n-Nest® pans handle up to 3000 lbs. safe static load. Available in 8 sizes, three attractive molded-in colors





general purpose Lewis fiberglass pans handle bigger payloads with less effort.



This Stack-n-Nest® truck is only one of the many different Lewis containers, each designed for a variety of handling operations. There are trays, pans, boxes, and trucks to fit all your handling requirements



SEND FOR THE BIG LEWIS CONTAINER CATALOG TODAY Shipment within 24 hours from receipt of order COMPANY A10 MONTGOMERY STREET . WATERTOWN, WIS.



There's a big difference . . . in fuel costs . . . in employee morale . . . in productivity of workers . . . in absenteeism due to colds or accidents . . . in protection of merchandise.

Only DAZZO Dock Shelters provide quick and full protection for dock operations in bad weather. Less than full protection is merely money wasted!

DAZZO Dock Shelters adjust themselves automatically to different dimensions of railroad cars or trucks. They expand in seconds by gravity, without use of springs. They retract out of the way when not in use.



Save money and grief . . . write for the facts about DAZZO Dock Shelters today!

ZZO PRODUCTS. ULster 5-6641

Circle 186 on Reader Service Card

BULLETINS CATALOGS

FILMS

truck. Comes furnished with mounting brackets. Capacities are 4,000, 6,000, 8,000, and 10,000 lb. Forks remain unchanged. It dumps all makes of drop-bottom boxes regardless of contents. Brochure details specifications and is illustrated with photographs and diagrams.

Little Giant Products, Inc.

Circle 407 on Reader Service Card

Bucket Elevator-Trough-Belt Conveyor Data

A valuable guide for dealers, distributors, plant operators and project engineers. This bound catalog and reference manual contains complete information on the company's bucket elevators and trough-belt conveyors. Includes prices, specifications, and dimensional data.

Universal Hoist Co.

Circle 408 on Reader Service Card

Steel Strapping Pocket Calculator

As a special service, this company will send you a steel strapping calculator. It's made of heavy paperboard, 9 inches long, less than 3½ inches wide. A quick setting will help you find out the pounds of strapping you need for your package, regardless of number of straps. It will tell you the pounds of strapping you need for the total



WIRE-SHIELD

Conveyor Guards

Save costs with these easily installed WIRE-SHIELD Conveyor Guards. Fabricated 2 x 4 welded steel mesh in standard 8 ft. lengths with a wide choice of widths and side heights. Finished in aluminum. Provides protection for all conveyors . . . straight, inclined and with 90° turns. Shipped ready-to-install.

WRITE FOR INFORMATION

SPRINGPORT Steel Products Co.

SPRINGPORT, MICHIGAN Circle 153 on Reader Service Card

MATERIAL HANDLING ENGINEERING

units you want to package. It will give you cost per unit, total cost for all units, cost per foot, and quantities needed to attain a lower price. It shows strengths and feet per pound for all stock sizes of Signode strapping. Complete instructions, illustrated with examples, show you how to operate it.

Signode Steel Strapping Co.

Circle 409 on Reader Service Card

Industrial Equipment Catalog

A 24-page full-color catalog-type brochure shows the entire new industrial equipment line of Massey-Ferguson. Action photographs, cutaway drawings, operating information, and specifications are included.

Industrial Division, Massey-Ferguson

Circle 410 on Reader Service Card

Strappina System

Booklet describes the company's entire line of heavyduty and tensional strapping, tools, accessories, and seals. Contains application and specification data. Easy-to-read facts are presented so that solutions to your specific problems may be efficiently and economically solved.

Brainard Steel Division, Sharon Steel Corn.

Circle 411 on Reader Service Card

Material Handling Equipment Rentals

A 16-page booklet outlines the Clark Rental system. A complete line of fork trucks, powered hand trucks,

Continued on page 140



ROWE - Adjust-A-Dock



ROWE - Adjust-A-Truck



ROWE Double leaf crossover bridge

Select the Best... from ROWE's complete line of

- Dock and truck leveling devices
- Crossover bridges

Over 80 standard electrohydraulic and air-oil powered dock level devices with 10,000 or 20,000 lbs. capacities and 6 mechanical, truck actuated units with 20,000 lbs. capacity are now available. Electro-hydraulic truck levelers installed where space is limited, available in 40,000 lb. capacity. Crossover bascule type bridge electro-hydraulic operated in either double or single leaf units. Capacities to customers specifications.

DETAILED

2534-C DETROIT AVENUE • CLEVELAND 13, OHIO

Circle 147 on Reader Service Card

Circle 67 on Reader Service Card

OPEN ANY FREIGHT CAR DOOR IN 20 SECONDS OR ESS with the



Write for complete details and railway products catalog ONLY \$4500 F.O.B. Bowerston

The Nolan Co., 110 Pennsylvania St., Bowerston, Ohio



Circle 66 on Reader Service Card







TOKHEIM CORPORATION

DESIGNERS AND BUILDERS OF SUPERIOR EQUIPMENT
1648 Wabash Ave. SINCE 1901 Fort Wayne 1, Ind.

Subsidiaries: Tokheim N.V., Leiden, Holland — GenPro, inc., Shelbyville, Ind., Factory Branch: 475 Winth Street, San Francisco 3, California In Canada: Tokheim-Reeder of Canada, Ltd., 205 Yange St., Toronto, Ont.

Circle 160 on Reader Service Card

BULLETINS CATALOGS

FILMS

towing tractors, and straddle carriers made by Clark Equipment Company's Industrial Truck Division can be rented on contracts of from one to five years. A onepage chart enables you to itemize their operating expenses as compared to the cost of renting comparable equipment. Company says that through rent you stabilize vour costs. You know in advance what your monthly charge will be, and that it will remain the same regardless of inflationary trends.

Clark Equipment Co.

Circle 412 on Reader Service Card

Protective Coil Wrap Papers



Two-page file folder L1A includes actual samples of the five standard grades available. The coil wrap is for automatic machine wrapping of metal strappings and wires, plastic and rubber hose, and other similar products. The folder also features Thilco's Longitudinal Pleating Coil Wrap for improved machine performance, greater operating efficiency, greater yield per roll, and better wrapping appearance.

It also describes the mill's new Creped Weights and Thilmany's new Pallet Load which the company says reduces handling costs and saves approximately 20% in storage space.

Thilmany Pulp & Paper Co.

Circle 413 on Reader Service Card

Sanitary Bucket Elevating Conveyors

The specially designed inter-locking buckets are filled gently by vibratory feeders, belt feeders, gravity chutes. The Robo-Lift bucket elevating conveyor travels in both horizontal and vertical planes without transferring or disturbing the product. It can pick up or discharge at any number of stations. Units are widely used in food and confectionery, hardware, automobile accessories, drug. chemical, and plastics industries.

Lynch-Robo Corp.

Circle 414 on Reader Service Card

All-Welded Stacking Pallets

Units permit floor to ceiling storage of a wide variety of loose or packaged materials. They can be built for light, medium, or heavy loading. They vary in height to handle small production items, or for any specified material sizes. Company says your ceiling is the limit, and asks you to outline your material storage needs.

Bernard Gloekler North East Co.

Circle 415 on Reader Service Card

Pallet Or Palletless?

What is palletless handling? Where does it fit? What are its advantages? Brochure is designed to give industrial lift truck users the pros and cons of both handling methods

in order that they might select the most economical system to suit their individual needs. Five pages of action photographs give ideas on how companies are handling their products Automatic Transportation Co.

Circle 416 on Reader Service Card

Slide Film On High Capacity Fork Trucks

"Dollars and Sense" is a 20 minute sound and color slide film, available free for showing. It illustrates applications and advantages of pneumatic-tire fork trucks of 15,000 to 40,000 lb capacity. It shows how Clarklift fork trucks can move heavy loads over rough terrain, soft ground, or ice and snow. Film stresses benefits such as efficiency, low operating costs, ease of servicing, and reduced driver fatigue.

Clark Equipment Co. reduced driver fatigue. Industrial Truck Division

Circle 417 on Reader Service Card

Reinforced Plastic Tanks

Completely weather-proof, they require no painting. Maintenance is eliminated. These corrosion resistant, reinforced plastic tanks are for use in the chemical and allied industries. The Kabe-O-Rapp tank consists of a fiberglass reinforced plastic tank shell. It's helically wound with stainless steel cable. Because the tank may be made translucent, there is no need for gauging to determine content level. For varied applications, they may be molded into complex shapes. Tanks are bonded at the erecting site by a cold set process.

Metalweld, Inc. M-W Protective Coatings Div. Circle 418 on Reader Service Card

You can BUILD CHANGE EXPAND MOVE

your storage racks with only a

> HEX KEY. HACKSAW and

RACKMASTER ® FITTINGS



RACKMASTER FITTINGS out tack-building time as much as nating threading and welding. They cut other

rack-building costs, too—

pipe is 100% salvageable

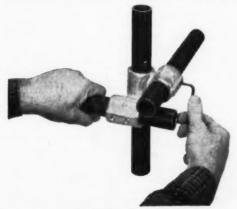
pipe-cutting is reduced to

pipe-culting is reduced to a minimum regular warehouse crews can build racks slip-on feature simplifies design and

RACKMASTER is stocked by lead-ing distributors. Write for details on Rack-master and multi-purpose NU-RAIL Fittings

THE HOLLAENDER MANUFACTURING CO., 3841 Spring Grove Ave., CINCINNATI 23, O.

Bulletin 38-FL



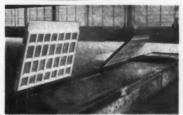
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OFFERS BOTH

MANUALLY OPERATED

mechanical





TRUCK **OPERATED**

machanical ramps

You get a choice of five manual ramps, 20,000 pounds capacity. Platform swings to nearly vertical position—trailer doors can be opened after trailer is parked at dock—overhead doors can be closed in front of platform. Only three moving parts. No levers project. Side-to-side platform adjustment.

You get a choice of three truck ramps, 20,000 pounds capacity. No operating cost, no electrical, hydraulic or pneumatic system to maintain. Year-around dependability. Platform floats—from 9° below to 17° above dock surface—automatically levels and locks.

For descriptive literature and installation details, write Dept. M1060

LOOMIS MACHINE COMPANY 133 EAST FOURTH STREET, CLARE, MICHIGAN

RITE. HITE DIVISION



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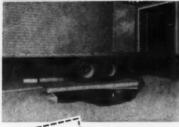
Dow Corning silicone lubricants have superior heat resistance . . . won't thin out, gum up or oxidize. They provide long-time lubrication even when bearing temperatures are as high as 400 F. Specify silicones wherever high temperature is a problem and "special" lubricants are required. Write today for FREE SAMPLE and literature. Dept. 5210.

FREE SAMPLE

Dow Corning CORPORATION

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Speed dock traffic

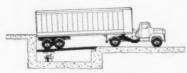




Truck Leveler

handles modern trailers with high beds and long overhang

Just a touch of a button and any truck bed is brought into perfect platform level at loading docks equipped with the Rotary Truck Leveler. Dangerous inclines between dock and truck bed are eliminated so that materials handling equipment can move in and out with maximum speed and safety. This modern hydraulically-operated device now has a 16' platform and 3' vertical travel to accommodate highway carriers of all sizes. The Rotary Truck Leveler can be installed at new or existing buildings and saves valuable space since it is recessed into the pavement in front of the loading dock.



RAISES OR LOWERS TRUCK BED TO DOCK LEVEL

ROTARY LIFT COMPANY

Division of Dover Corporation

Memphis, Tenn.—Chatham, Ont.

MAIL COUPON FOR CATALOG

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ASSOCIATIONS



OFFICERS of the American Materials Handling Society present a check for \$5,000 to officials of the MHEDA National Training Center for the purchase of debentures. Shown left to right are Stephen Traudt, AMHS Immediate Past National President; Robert Rutherford, AMHS National President; Clifford Haddrell, Chairman of the Board of Management, MHEDA; and Don Bowman, Executive Vice President of the Material Handling Equipment Distributors Association. The Center, established early this year, is the first educational facility that devotes its entire time and personnel to the advancement of the science of material handling.

AMHS

Newly elected officers of the Middle Tennessee Chapter of the American Material Handling Society are: R. W. Wood, president; J. D. Wray, vice president, programs; T. R. Parke, secretary; L. A. Troughton, treasurer; G. Morrow, assistant program chairman; F. P. Ozburn, membership chairman; and D. A. Whitehead, assistant secretary.

At the close MHI of each daily session of The Material Handling Institute Central States Show, a \$500 MHEDA debenture will be awarded as a door prize. The show will be held at the Kentucky Fair and Exposition Center, Louisville, Nov. 1, 2, and 3. As the debentures bear interest at the rate of 6%, and mature in 4 years, the 1964 cash value of each bond is \$620. The door prizes are limited to persons who use material handling equipment in factories, warehouses, piers, storage yards, and terminals. Show

hours have been changed. Doors open at 11:00 a.m. all three days. On Nov. 1 and 2, the show stays open until 9:00 p.m. On closing day, Nov. 3, it ends at 5:00 p.m.

Fall membership meeting of MHI was held Sept. 13 at The Cavalier, Virginia Beach, Va.

The Maryland Division of the Society of Packaging And Handling Engineers is holding its 6th Annual Eastern Packaging and Handling Show Oct. 24-25 at Baltimore's Fifth Regiment Armory. Hours on Monday, Oct. 24, will be from 5:00 to 10:00 p.m. and on Tuesday, Oct. 25 from 12:00 noon until 9:00 p.m.

MHEDA

Dates of the Material Handling Equipment Distributors Association 1961 National Convention have been set for June 1, 2, 3 at Denver Hilton Hotel, Denver, Colo.

Continued on page 144



KEEP OUT RAIN - SNOW - COLD

- · Made of heavy flame and water-resista canvas or rubberized nylon.
- Sturdy frames and hardware.
- Scissor arms permit folding.
 Tailored to your loading dock.

Mamaux Folding, Loading Dock Covers save you many times the cost in preventing merchandise damage in rainy, cold or ho weather

Folding Canvas or Asbestos Welding Screens, Stock sizes and specials

Tarpaulins . . . 100,000 Sq. Ft. in Stock

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made in any quantity because die cost is negligible in our "Chem-Board" process.

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DESIGNED. ENGINEERED & STOCKED for all standards

FAST ASSEMBLY & DELIVERY

Nationally known outside purchased components and transmission equipment available locally almost anywhere and partly reflecting our corporate image:

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BELTING-Globe, Goodrich, Thermoid, etc.

SHEAVES & LINK V-BELT-Worthington.

BEARINGS-Sealmaster, Roberts, Dodge, Schatz,

ROLLER & CONVEYOR CHAIN & SPROCKETS -Chain Belt, Whitney, Cullman, etc.

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Over \$15,000,000.00 of our equipment in operation by many of the nationally known companies.

We are known for the company we keep and most orders are repeats.

Send for our Whole Line Folder (WLF-6) which describes and illustrates our Standard lines and from which detailed Bulletins may be ordered without obligation.

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PRIME-MOVER PLATFORM TRUCKS IN TWO SIZES 1000 lb. & 4000 lb. CAPACITIES

MODEL F-10 A 1000 lb. capacity truck. Carries cartons, long stock, mixed freight, maintenance supplies, baggage, fire equipment. Ideal for foremen superintendents inspectors, supervisors. 18 sq. ft. deck area. Wisconsin engine. Industrial type combination transmission. Price: \$880 manual start; \$996 electric start, F.O.B.

PRIME-MOVER

Prime-Mover platform trucks are marketed by industrial truck distrib utors. Ask there or write: Prime-Mover Co., Muscatine, Iowa.

MODEL F-40 Torque converter drive. No shifting, smooth starts. This is a big rugged 4000 lb. capacity unit that delivers heavy duty service as a freight carrier, shuttle truck, long stock transporter, and to give mobility to equipment and personnel. 28 sq. ft. deck area.



ASSOCIATIONS

Jack D. Patten is chairman of this 5th annual meeting

The MHEDA National Training Center has announced lecturers for the Center's special Chain Store Grocery Warehousing Course on material handling Oct. 10-14. They are: Irving M. Footlik, Dave Gardinier, John C. Bouma, Donald J. Bowersox, Vernon J. Winter, George Carr, and George A. Ram-

Demand for FBA fibre boxes in 1960 will be 4% above 1959 shipments. During the first half of 1961. they're expected to hit a 91/2% gain over the level of shipments in the first half of 1960. These figures have been presented to the Fibre Box Association by Peter W. Houguet, President of the Econometric Institute. Houguet further predicts that fibre box demand in 1960 will average 2.197 million square feet as compared to 1959's level of weekly shipments of 2,108 million square feet. Houguet says there is no possibility of a 1961 recession, and that the third quarter of 1960 is the low point for the next 18 months.

The 2nd An-NWPMA nual Western Pallet Users' Conference is announced by the National Wooden Pallet Manufacturers Association. It will be held at the Statler-Hilton Hotel in Los Angeles, Nov. 17-18. Leading authorities will speak on "The Operation Of Pallet Pools", "Correct Use And Maintenance Of Pallets", "Inspection Procedures", "How To Cut Packaging Costs With Palletization", "Purchasing And Specifying Wooden Pallets", etc. Over 50 persons attended last year's conference held at Stanford University. Registration fee is \$15 per person. Registrations must be made in advance directly to NWPMA, 609 Barr Building, Washington 6, D. C.

The National Wooden Box Association has published "Bin Box-

MATERIAL HANDLING ENGINEERING



- **CHECK These Features**
- 314" Lowered Height
- 5" Lift
- Light Weight
- Accurate Steering
- Short Wheelbase
- Quality Construction

BT24 (2400 lb. Capacity).....\$350 8T44 (4400 lb. Capacity)....\$395 Both models available in 20" and 27" widths: 36" 42" and 48" lengths. Specify when ordering

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es", a brochure intended to serve as a guide to lower handling costs in industry and agriculture. It gives information on factors to consider in the design of effective high-capacity handling containers, H. R. Hudson, NWBA's executive vice president says this about the 12 page guide: "This manual points out the important factors which must be considered in determining how bin boxes will be effective in a particular application. It will aid in developing the proper design to meet the necessary requirements. It is based on information gathered from many sources, particularly the experiences of both bin box manufacturers and users over a period of vears." The brochure is available from any NWBA member.

Shipments of FPRA folding cartons were down sharply in July, compared with the same month a year ago, according to the Folding Paper Box Association of America. Dollar volume was 7.7% under the previous July; tonnage off 13.4%.



portable VHITELIGHT MAGNESIUM DOCKBOARDS & BRI

- STRONGER & LIGHTER—takes heaviest loads—made from ZK60, super-high strength-to-weight ratio magnesium alloy ... assembled with historegist aluminum alloy rivets
- Easy-rolling, non-skid **TRAILER-TYPE FLOOR** made of integrally stiffened, fluted, interlocked extruded sections.
- Exceptionally strong, rigid SIDE RAILS—complete wheel confinement . . . comfortable gripping for easy lifting and mobility
- 4 unique, easily adjustable SPACERS—extra long for complete stability.

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heavy-duty curbing & flooring. In straight, flared and round shapes, and in ramp-dockboard-combinations.

Lengths: $3\frac{1}{2}$ to 10 feet. Widths: 3 to 6 feet.

Special sizes, types, lor lengths, greater widths, lar capacities, made to order,

WRITE, WIRE, PHONE NOW for complete information.

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One of the World's Largest Producers of Magnesium Alloy Mill & Finished Products.

slotted angle

galvanized or baked enamel finish

SAVES TIME MONEY



• Frontier slotted angle is ideal for fast, easy construction of all types of structures racks, ramps, platforms, etc.

• Just 3 easy steps — measure, cut and bolt with selflocking nuts

 Comes in 12 gauge and gauge cold rolled steel in 10 or 12 feet lengths. Write for

complete catalog and load charts.

FRONTIER MANUFACTURING CO.

P. O. Box 13266, Dallas 20, Texas

Ask about our complete line of steel shelving and shop equipment.



Chuckaway **Palletizing** with steel strapping saves cost of 2 men

Using expendable paperboard pallets and Signode strapping equipment, this replacement parts manufacturer has reduced his packaging operation from 3 men to one man.

Conveyors carry the corrugated containers to the Signode power strap feeder and Model AE strapping tool, where two straps are automatically fed, tensioned and sealed around both the container and Chuckaway expendable paperboard pallet. A fork truck then takes the strapped units to the loading dock.

Signode expendable paperboard pallets are light, strong, shock absorbing. A 10-pound pallet can support as much as 6,000 pounds. There is no pallet return problem. Let your local Signode Pallet Licensee help you with your packaging problems.

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15 Sofeway

PORTABLE ELEVATING TRUCKS



Handling at its best...for less

Here's how to handle twice as much, in the same time, with the same crew! Put AP Safeway Trucks to work now. Pedaloperated and battery-powered . . . 46" to 130" lift . . . built-in stability for loads up to 2000 pounds . . . engineered so operators raise, lower position and stack loads with less effort.

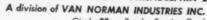
Your AP savings begin with initial cost and extend to operating costs, which are far lower than for heavy-duty motorized trucks. And rugged, compact AP design gives both big-truck dependability and small-truck maneuverability-the unmatched combination for highest handling economies in time, storage space, and maintenance.

Get full details from your AP-Franchised Distributor. Call him today!



I An AP "super-special" engineered to take the heavy work and high costs out of horizontal handling. New, ex-ceptionally efficient, hydraulic drive attachment for portable elevating trucks.





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2589

NEWS

INDUSTRY

Heads Division Sales

Harold O. Perlman has been named sales manager of the Lathrop



vears.

Paulson Co.'s industrial division. He was projects manager Material Handling and Processing Department, Sumner Sollitt Co. of Chicago. Perlman has been in industrial sales, en-

gineering, and manufacturing for 16

Gerrard in New Building

A. J. Gerrard & Co. is making its steel strapping and strapping tools in a new plant in Des Plaines, Ill. It's twice as big as the former 40,000 sq ft plant. President A. J. Gerrard said sales have quadrupled in volume during the last five years.

Name Sales Managers

Two new regional sales managers for Mobilift fork lift trucks and tow-





ing tractors are John A. Brenneis of New York City and Ned J. Walsh of Fort Wavne, Ind. Brenneis has been in material handling sales since he left the Marine Corps in 1953. Walsh organized the Walsh Lift Truck Co. in 1958 in Fort Wavne.

Allis-Chalmers Sales Increase

For the first six months of this vear, Allis-Chalmers sales hit \$282 million, compared with \$221 million for the same period of 1959. Earnings rose to \$7,700,000, compared with \$5,300,000 for the same period

MATERIAL HANDLING ENGINEERING

of 1959. President Robert S. Stevenson said shipments of fork lift trucks and electrical and industrial apparatus were strong.

New Engineering Head

Carl vonLinsowe is director of engineering-Industrial Products for

the J. I. Case Co.

He was manager of engineering at the

Churubusco, Ind., Works. He will di-



rect the industrial and utility machinery engineering programs. He also will administer the

Starts Development Division

firm's test facility in Arizona.

Clark Equipment Co. has a new division to explore areas for expansion. The Clark Development Division will look into areas where Clark is not now active. Key division personnel: Cyril B. Rogers, manager; Glen Johnson, marketing manager, and Richard Jung, chief engineer.

Head New Combine

Marvin H. Coleman is president of Conveyor Systems Inc., firm which recently purchased Oliver's A. B. Far-





guhar Division. Sales efforts of the two firms have been combined to offer complete service in material handling by conveyor. Vice Pres. Edward L. Weinthaler supervises the custom engineering of the combined operation. C. W. King continues as general sales manager of Farquhar.

New Toteline Sales Manager

Benjamin E. Ewing Jr. is sales manager of Molded Fiber Glass Tray Co. He succeeds John W. Moore who resigned. Ewing was vice president of Knight & Bostwick of Newark, N.Y.

Doubles Metzgar Plant

Expansion at Metzgar Conveyor Co. has doubled the floor space and Continued on page 148 SERVICES AND FUELS 70-UNIT FLEET FOR JUST 216 AN

Kalamazoo Speed Truck 'Tanker' Serves Fork Lifts in Cereal Plant



Kalamazoo Speed Trucks save money on a hundred production and maintenance jobs. Combining low original cost and long service with these hourly savings, they're becoming the basic utility vehicle for leading firms across the country. Choose from 5 models, up to 4,000 lb. capacity to fit your needs.

Write for specifications and detailed case histories.







STACKING HOPPER BOXES



- . SAVES SPACE
- TIME LABOR
- INCREASES PRODUCTION
- MULTIPLE STACKING
- ACCESSIBILITY EITHER ONE OR BOTH ENDS
- . CAPACITY 4000 LBS. IN STANDARD SIZES.



RUGGEDLY DEPENDABLE!

CERCO Stacking hopper boxes have a heavy welded steel tubing frame and heavy gauge sheet metal deck, sides and hopper. Boxes can be furnished with hoppers either one end or both ends. Standard size 30'x30'x20', excluding hoppers. Special sizes designed to meet your material handling problems.

Write for information.

C. E. ROBINSON CO. Phone: SAratoga 3-3403 222 COLBURN AVENUE

JOLIET, ILLINOIS

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INDUSTRY

NEWS

added production equipment. President Robert H. Metzgar said this was done because of increased demand, particularly for the Midget-type wheel and roller conveyors. He said the firm now can double its volume and ease delivery date problems.

Heads Vickers Development

Dr. W. Wai Chao is director of research and development at Vickers



Inc., Division of Sperry Rand Corp. He was named chief of research in 1959. Dr. Chao received his BSME from National Tung-Chi University in China, his MS and ScD degrees from MIT.

3M Division Head

Minnesota Mining & Manufacturing Co. named Norman H. Gunderson manager of the Mid-States Gummed Paper Division. He was Chicago branch division sales manager. Gunderson succeeds W. G. Bretson, assigned to St. Paul.

New Products Help Sales

President Julien R. Steelman of Koehring Co. reports \$4 million in sales of newly acquired products during the six months ending May 31. This helped the net sales of \$31,600,-000 for this period to exceed a like period in 1959 by \$1,500,000.

Speedloader Product Manager

Jack E. Fathauer, former All-American football guard, is product manager, speedloader



system, National Malleable and Steel Castings Co. He formerly was sales manager of the Cleveland district railway division.

Engineering Expansion

Sturdi-Bilt Material Handling Division, Union Asbestos & Rubber Co., has expanded its engineering facili-



ties. Vice President B. G. Metzger said this is to help storage rack customers who rely more and more on suppliers for accurate engineering help. The service is free.

Manages Factory

Vernon Marsh, former general manager of factory operations for



Kromex Co., is new factory manager of the American Pulley Co. plant in Philadelphia. He formerly was with Coleman Co. and Mid-States Manufacturing Inc. American Pullev makes a wide line of material handling equipment.

VP For Ludlow Papers

E. Lee Turley is new vice president of sales for the Ludlow Papers Division, Ludlow Corp. He was VP and general manager of Ludlow's fine paper operation.

Bemis Sales Are Up

Bemis Bro. Bag Co. reports sales for the first six months of this year were more than \$66 million, an increase of 4 percent over the same

period of 1959. Net income came to \$1,500,000, a rise of 16 percent over the comparable period. Chairman F. G. Bemis and President Judson Bemis said they anticipate a similar report for the last half of this year.

Conveyor Products Chief Engineer

U. S. Rubber Co. named William R. Tise chief engineer for conveyor products sales. He was West Coast sales engineer for the department.

New Taylor VP

Harold "Jack" Taylor has joined the Harold G. Taylor Co. of Toledo



as vice president. He formerly was with Sanders Tool and Production and Janson Tool and Die Co. The Toledo firm, a manufacturer's representative, includes the Revolvator line.

AVC Sets Up Network

American Viscose Corp. is establishing a network of more than 100 Continued on page 150 Circle 176 on Reader Service Card





FREE FOLDER

Case histories tell how vou can

Exhaust fumes CAN kill

Unhealthful air reduces employee productivity; cuts profits. Learn how easily installed, economical Oxy-Catalyst Exhaust Purifiers convert gasoline, LP gas or

diesel exhaust into a harmless vapor for safer indoor operation of lift trucks, sweepers, engine-generators, construction and mining equipment. Send today for free folder of case histories!



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A crane, custom-tailored in every detail to your client's needs, is available from Conco at a practical cost. Here you'll find engineering experience spanning 35 years, and unique plant flexibility that permits easy handling of specialised cranes— spark and explosion proof, indoor-outdoor, circular, and cranes employing closed circuit TV for remote-control operation. May we submit a proposal on your next crane requirement—whether standard or highly specialised.

Material Handling Division

CONCO ENGINEERING WORKS, INC.
38 Grove 51., Mendotu, Illinois
55: Spartan Tool Division — Powered Sewer Cleaning Equipield Control Division — Baremetric Draft Controls e Concoroducts, Inc. — Brick, Tile, Stone



Circle 44 on Reader Service Card

INDUSTRY

NEWS

distributors around the country. They will market products from the new Industrial Packaging Department. A Far Western District Sales Office recently was opened in Los Angeles, headed by Brad Hoyt.

Clark Appoints Two

New vice president of sales at Clark Equipment International, C. A., is Charles W. Massie Ir. He's re-





sponsible for Clark sales all over the free world, except in the U.S. and Canada. Clark also named Eugene A. Keen an assistant comptroller at the main offices in Buchanan, Mich. Keen formerly was central accounting manager of the Brown Trailer Division

Heads Railway Markets

Robert L. Clark is railway market manager of Exide Industrial Division of The Electric Storage Battery Co. He was railway sales engineer in the Chicago district.

Promotions at Allis-Chalmers

New assistant general manager of the Allis-Chalmers Construction Ma-



chinery Division is John W. Carlson. He was general manager of the Deerfield Works. Moved up to the Deerfield post was James B. Codlin, former chief engineer there. Named

Carlson

engine product manager of the Engine-Material Handling Division was Louis B. Schultz, OEM Engine Sales manager for the Chicago branch.

Plan New Plant

Crompton & Knowles Packaging Corp. has broken ground for a new building which will more than double present space. The building will house manufacturing, engineering,





DOCK BOARDS

with EXCLUSIVE automatic extending HINGED LIP!

Now trucks can load and unload with greater speed and efficiency. No operator required...no levers to operate, project, bend or maintain. With the Auto-Mechanical Dock Board hinged lip is automatically extended. As it moves down, the lip rests in position on truck bed. Lip can be retracted from truck without truck being moved. Dock board automatically adjusts to either side of the horizontal plane for canted beds.

Ramp length from 6' to 10'
Up travel with lip fully extended from 20" to 34"
Up travel with lip down, from 7" to 20"

Pit — 12" or 24" depending on down travel required

Choice of three releases

Assembled and tested, ready to operate when delivered.

Complete line of Auto-Mechanical Dock Boards include:

Truck Actuated Boards • Hinged Lip Boards
• Railroad Boards • All-weather Shields
• Metal Face "Shock" Dock Bumpers

for information or name of representative, write or call:

Auto-Mechanical DOCK BOARD, INC.

300 N. Stanwood Rd. • Columbus 9, Ohio Circle 26 on Reader Service Card October, 1960 and development. More than 100 employees will move from the present Holyoke location to the new plant near Springfield, Mass.

Takes Over District

J. Don Lemmer is new district sales manager for Cushman Motors.



He's in charge of industrial, commercial, and golf vehicles for Illinois, Indiana, Southern Wisconsin, and Western Kentucky. Arthur O. Johnson continues as district sales manager in

charge of motor scooters.

BFG Detroit Manager

Charles H. Kanavel is Detroit Manager, Equipment Sales, for the B. F. Goodrich Tire Co. He was national field sales manager in the BFG aviation products division.

Distributor News And Company Reps

Stanley Steel Strapping named Peter A. Wilson sales representative for Virginia.

Euclid Crane & Hoist Co. appointed George P. Stearns exclusive representative in Southern California, Arizona, and Clark County, Nevada.

Mid-States Gummed Paper Division, Minnesota Mining and Manufacturing Co. announced three regional reps: John E. Mines in Atlanta; Dudley H. Price in High Point, N. C., and Edward R. Gallagher in Philadelphia.

Union Steel Products Co. named Basic Handling Systems as representative in the Cleveland area.

The Yale & Towne Manufacturing Co. announced Pacific Lift Truck is exclusive representative in Southern California.

The Cargotainer Division, Tri-State Engineering Co., named Haddrell Corp. exclusive dealer in New England.

Kwik-Mix Co., a Division of Koehring Co., appointed Waco Scaffold & Equipment Co., Portland, Oregon, a distributor.

General Precision Inc. opened new offices in Washington at 724 Fourteenth St. NW for its GPL and Link Division representatives.

Nutting Truck and Caster Co. appointed Diagraph-Bradley Industries Inc. as exclusive sales rep for the

Continued on page 152

does a

PRODUCT have a personality?



We like to think so, especially about K-W Industrial Batteries. This much is certain. In this dynamic and atomic age we must constantly improve our products through design and research. Our continuous efforts have created a nationally known product personality, the K-W Industrial Battery. Container Corporation of America and other users are served faithfully by K-W Top. Power, a product designed and built for maximum service and expectancy.



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For Power-Driven Handling at TODAY'S LOWEST INVESTMENT

"Double-Powered," with push-button portability plus lifting, new POWER-BOY brings power-handling equipment within the budget of every plant, every department. Electric motor operated through smooth fluid drive clutch, V-belted to "floating" rubber tired drive wheel, it moves and lifts a capacity load easily, quickly effortlessly. Features push button forward and reverse, safety braking, 180° steering, separate battery, built-in charger. Available in standard, hinged, telescopic HY-BOY VERTI-LIFTS from 60° to 112°. Write for the complete POWER-BOY facts now.



WEST BEND EQUIPMENT CORP.
MATERIALS HANDLING ENGINEERS

335 Water Street • West Bend, Wisconsin

Circle 173 on Reader Service Card

INDUSTRY

New York metropolitan area and Northern New Jersey. Diagraph-Bradley of New England will handle Nutting products in the Boston area.

Barrett-Cravens Co. appointed E. E. McVeigh & Co. Cleveland area representative.

Seal-O-Matic Dispenser Corp. opened a branch office in London to distribute products made by Seal-O-Matic and its affiliate. Flash Mfg. Co.

Lewis-Shepard Products Inc. named Landon B. Atkins exclusive sales and service representative in St. Louis and Richard H. Johnson Jr. exclusive sales and service representative in Knoxville, Tenn.

The Cambridge Wire Cloth Co. opened a new sales territory, including upstate New York, Massachusetts, Rhode Island, Maine, New Hampshire, and Vermont, with headquarters in Stoneham, Mass.

Clark Equipment Co. appointed Carolina Equipment & Parts Co. of Columbia, S.C., distributor of the Michigan line for the entire state.

Uhrden Inc. named Morris Equipment Co., St. Louis, exclusive distributor of Tubar material handling equipment for parts of Missouri and Illinois

Harnischfeger Corp. announced Maquinas y Herramientas Sabin St. Germain, S. A. of Mexico City as P & H hoist and crane distributor for Southern Mexico.

The American MonoRail Co.'s Conveyor Division appointed Hapco Equipment Co. of Buffalo to handle the Chainless and Cable-Way conveyor systems.

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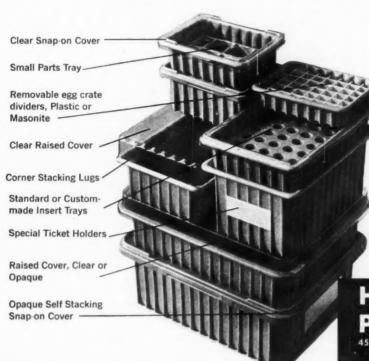
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